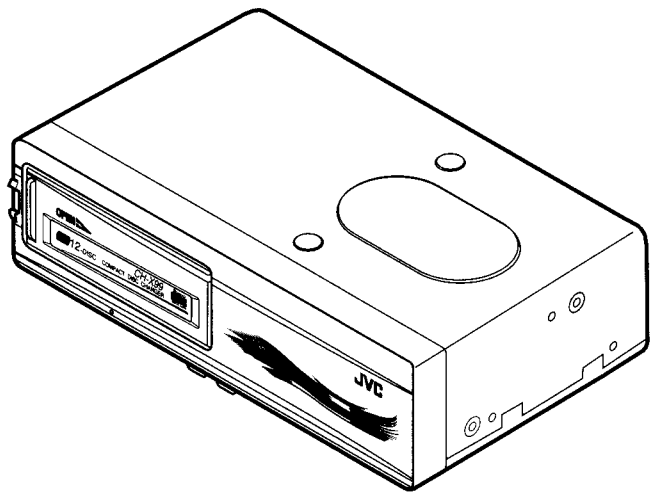
JVC

SERVICE MANUAL

COMPACT DISC AUTOMATIC CHANGER

CH-X99/CH-X100



COMPACT disc DIGITAL AUDIO

Area suffix

A	Australia
B	U.K.
C	Canada
E	Continental Europe
G	Germany
GE	Easterm Europe Austria and Switzland
GI	Italy
J	U.S.A.
U	other areas

Note : CH-X99 and CH-X100 are completely same in their structure except for their out look color.
CH-X99 (Metallic Grayish purple)
CH-X100 (Metallic Dark Gray)

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No.49448
Jan. 1998

Safety Precautions

J (USA) Only
Important for Laser Products

1. CLASS 1 LASER PRODUCT
2. DANGER: Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. CAUTION: Do not open the bottom cover. There are no user serviceable parts inside the unit; leave all servicing to qualified service personnel.
4. CAUTION: The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when unloading cartridge and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
5. CAUTION: Use of controls of adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
6. CAUTION: The laser is able to function, if safety switches are out of function. The laser light is invisible, avoid exposure, do not disassemble the laser unit, but replace the complete unit.

B/E/G Only
Important for Laser Products

1. CLASS 1 LASER PRODUCT
2. DANGER: Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. CAUTION: Do not open the bottom cover. There are no user serviceable parts inside the unit; leave all servicing to qualified service personnel.
4. CAUTION: The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when unloading cartridge and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
5. CAUTION: Use of controls of adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

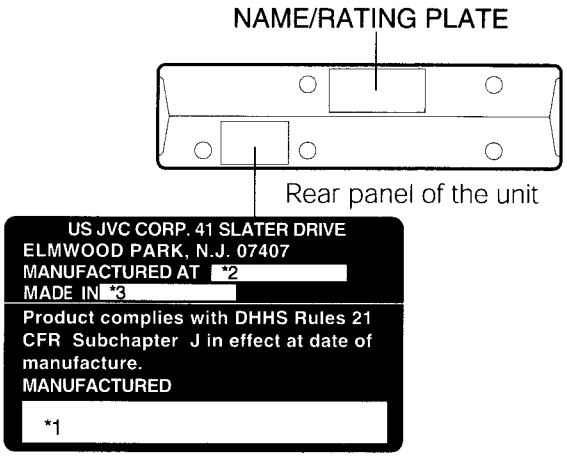
ADVERSEL: Usynling laserstråling ved åbning. når sik-kerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

VAROITUS: Varmuuskytkimen oliessa pois päältä kun laite avataan, siellä kehittyy näkymätöbtä. Älä pane itseäsi säteilyn altiiksi.

VARNING: Osynling laserstråining uppstår vid komponentens öppning när säkerhetsbrytaren äe frånslagen.

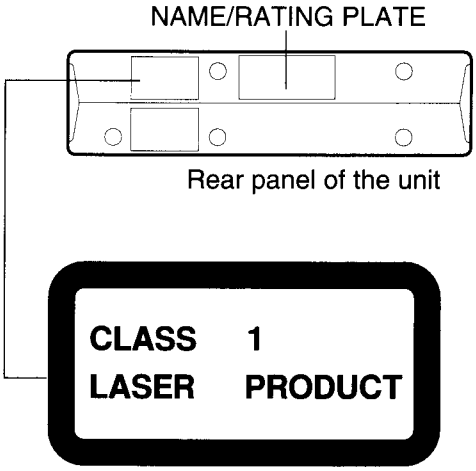
ADVARSEL: Usynling laserstråling ved åpning når sik-kerhetsbryteren er ude af funktion Unngå utsettelse for stråling.

Identification And Certification Labels

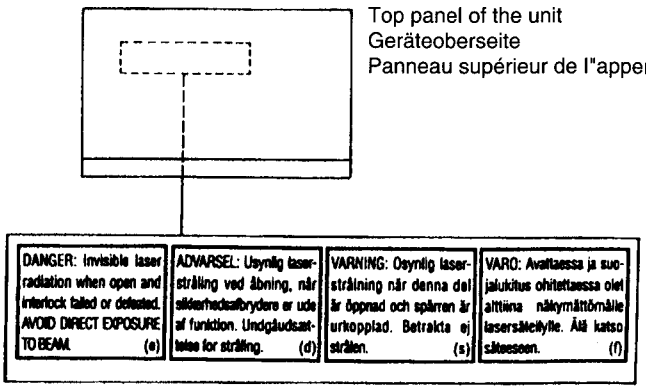

NAME/RATING PLATE
Rear panel of the unit
US JVC CORP. 41 SLATER DRIVE
ELMWOOD PARK, N.J. 07407
MANUFACTURED AT *2
MADE IN *3
Product complies with DHHS Rules 21 CFR Subchapter J in effect at date of manufacture.
MANUFACTURED
*1

Notes
*1 The date of manufacture.
*2 The ID code of manufacturing plant.
*3 Marking of country origin.

Position And Reproduction Of Labels



Obs:
Apparaten innehåller laser-komponent av högre laserklass än kiass 1.


Top panel of the unit
Geräteoberseite
Panneau supérieur de l"appereil
DANGER: Invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)
ADVARSEL: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgåudsættelse for stråling. (d)
VARNING: Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen. (s)
VARO: Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen. (f)

⚠CAUTION

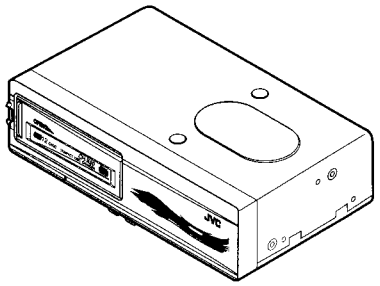
Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.

JVC

COMPACT DISC AUTOMATIC CHANGER

CAMBIADOR AUTOMATICO DE DISCOS COMPACTOS
CHANGEUR AUTOMATIQUE DE DISQUE AUDIONUMERIQUE

CH-X99



COMPACT disc DIGITAL AUDIO

For Customer Use:
Enter below the Model No. and Serial No. which are located on the top or bottom of the cabinet. Retain this information for future reference.

Model No. _____

Serial No. _____

INSTRUCTIONS

MANUAL DE INSTRUCCIONES
MANUEL D'INSTRUCTIONS

VNN3841-631S
[J,U]

ENGLISH

Thank you for purchasing this JVC product. Please read these instructions carefully before starting operation to be sure to obtain optimum performance and a longer service life from the unit.

ESPAÑOL

Muchas gracias por haber comprado este producto de JVC. Tenga a bien leer detenidamente este manual de instrucciones antes de poner en funcionamiento la unidad a fin de obtener un rendimiento óptimo y mayor duración.

FRANÇAIS

Nous vous remercions d'avoir acheté cet appareil JVC. Veuillez lire consciencieusement ce manuel d'instructions avant de commencer à faire fonctionner l'appareil de façon à être sûr d'obtenir les performances optimales et la plus longue utilisation de cet appareil.

INFORMATION (For U.S.A.)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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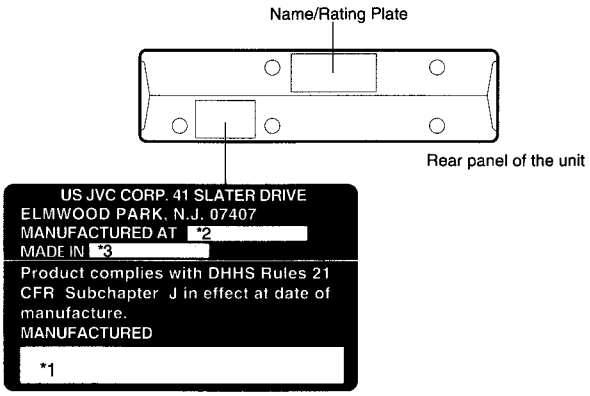
IMPORTANT FOR LASER PRODUCTS (For U.S.A. only)

PRECAUTIONS

1. CLASS 1 LASER PRODUCT
2. **DANGER:** Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. **CAUTION:** Do not open the top cover. There are no user serviceable parts inside the unit, leave all servicing to qualified service personnel.
4. **CAUTION:** The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when unloading the CD magazine and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
5. **CAUTION:** Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Identification And Certification Labels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MANUFACTURED
*1

Notes:
*1 The date of manufacture.
*2 The ID code of manufacturing plant.
*3 Marking of country origin.

Note:
This changer can be connected to JVC KD-SX or KS-FX series receivers that include a Changer Control function. When connecting to JVC KD-GS or KS-RT series, use the KS-U14K option cord. For more information, consult your nearest JVC car audio dealer.

Nota:
Este cargador puede ser conectado a los receptores de la serie KD-SX o KS-FX de JVC que incluyen una función de control del cambiador. Para conectarlo a la serie KD-GS o KS-RT de JVC, emplee un cable opcional KS-U14K. Para mayor información consulte a su concesionario JVC de equipos de audio para automóviles más cercano.

Remarque:
Ce changeur peut être raccordé aux récepteurs de série KD-SX ou KS-FX JVC qui disposent d'une fonction de commande de changeur. En raccordement aux séries KD-GS ou KS-RT JVC, utiliser le cordon KS-U14K en option. Pour plus d'informations, consulter votre revendeur d'autoradios JVC le plus proche.

WARNING

1. This unit is designed to operate with 12 volts DC, NEGATIVE ground electrical systems only.
2. When replacing the fuse, use one with the specified rating for this unit. If the fuse blows frequently, consult your nearest JVC car audio dealer.

Mistracking
Mistracking may occur when driving on an extremely rough road. The unit and compact disc will not be damaged by mistracking, however, since it is offensive to the ear, stop playback and restart when you reach a road that's in good condition.

ADVERTENCIA

1. Esta unidad ha sido diseñada para funcionar con 12 voltios de CC, con sistemas eléctricos de masa NEGATIVA solamente.
2. Cambie el fusible por uno con la capacidad especificada. Si éste se quema a menudo, consulte a su concesionario JVC de equipos de audio para automóviles más cercano.

Mal seguimiento
El mal seguimiento se produce cuando se conduce por una carretera muy irregular. No obstante, aunque la unidad y compact disc no se dañarán por esta razón, es conveniente detener la reproducción y volver a escuchar el disco cuando llegue a una carretera en buenas condiciones, puesto que resulta molesto para los oídos.

AVERTISSEMENT

1. *Cet appareil est conçu pour fonctionner sur courant continu de 12 volts, à systèmes électriques de masse NEGATIVE seulement.*
2. *En remplaçant le fusible, en utiliser un avec la valeur spécifiée pour cet appareil. Si le fusible saute souvent, consulter votre revendeur d'autoradios JVC le plus proche.*

Erreur d'alignement
Un problème d'alignement peut se produire en conduisant sur une route très mauvaise. L'appareil et le disque audionumérique ne seront pas abîmés par un problème d'alignement, toutefois, comme ce n'est pas agréable pour les oreilles, arrêter la lecture et la reprendre quand la route sera meilleure.

PRECAUTIONS

1. **Car's Internal Temperature**
   Before listening to CDs after your car has been parked for some time in low or high temperatures, wait until the temperature inside the car stabilizes.
2. **Condensation**
   In the following cases, moisture may condense on the lens, a critical part of the CD player, making the CD signal unreadable:
   - When a heater has just been turned on.
   - When humidity is high.
     In these cases, unload the CD magazine and wait for 1 or 2 hours.
3. **Volume Setting**
   - CDs produce very little noise compared with analog sources. If the volume level is adjusted for these sources, the speakers may be damaged by the sudden increase in the output level. Therefore, lower the volume before operation and adjust it as required during playback.
   - Adjust the volume so that you can hear sounds outside the car.

PRECAUCIONES

1. **Temperatura interna del automóvil**
   Antes de escuchar un CD después de que su automóvil haya estado estacionado durante algún tiempo en bajas o altas temperaturas, espere hasta que la temperatura dentro del mismo se estabilice.
2. **Condensación**
   En los siguientes casos, la humedad puede condensarse en la lente, que es un componente clave del reproductor de CD, imposibilitando la lectura de la señal del mismo:
   - Cuando se haya encendido un calentador.
   - Cuando la humedad es alta.
     En tales casos, extraiga el magazín y espere durante 1 o 2 horas.
3. **Ajuste del volumen**
   - El CD produce muy poco ruido en comparación con las fuentes analógicas de sonido. Si el nivel de volumen está ajustado para estas fuentes, se puede dañar los altavoces debido al súbito incremento del nivel de salida. Por lo tanto, reduzca el volumen antes de ponerlo en funcionamiento y ajústelo como desee durante la reproducción.
   - Ajuste el volumen de tal manera que usted pueda escuchar los sonidos fuera del automóvil.

PRECAUTIONS A OBSERVER

1. **Température ambiante dans la voiture**
   Pour l'écoute de disques audionumériques après un stationnement assez prolongé de la voiture à la chaleur ou au froid, attendre que la température dans la voiture se stabilise.
2. **Condensation**
   Dans les cas suivants, de l'humidité peut se condenser sur la lentille, une pièce vitale du lecteur CD, rendant impossible la lecture du signal CD:
   - *Quand le chauffage vient juste d'être mis.*
   - *Quand l'humidité est forte.*
     Dans ces cas, retirer le magasin CD et attendre environ 1 à 2 heures.
3. **Réglage du volume**
   - *Les disques audionumériques produisent très peu de bruit comparés avec des sources analogiques. Si le niveau du volume est réglé comme pour ces sources, les haut-parleurs peuvent être abîmés par une augmentation soudaine du niveau de sortie. Par conséquent, baisser le volume avant fonctionnement et le régler comme voulu pendant la lecture.*
   - *Régler le volume pour pouvoir entendre les sons à l'extérieur de la voiture.*

INSTALLATION

- Before installation, be sure to remove the screw and holder (shown by Ⓐ) for transportation. Now, stick the seals provided over the holes in the bottom of the unit. (Fig. a)

INSTALACION

- Antes de la instalación, asegúrese de sacar el tornillo y soporte (indicado con Ⓐ) para el transporte. Posteriormente, fije los sellos suministrados en los orificios en la parte inferior de la unidad. (Fig. a)

MISE EN PLACE

- *Avant installation, bien retirer la vis et la griffe (montrées par Ⓐ) pour le transport. Coller alors les joints fournis sur les trous sur le fond de l'appareil. (Fig. a)*

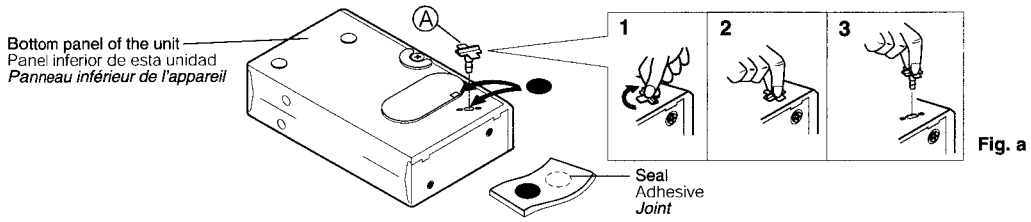


Fig. a

1. **Avoid installing in the following places**
   - Where it would be exposed to direct sunlight or heat directly from the heater or in an extremely hot place.
   - Where it would be subject to rain, water splashes or excessive humidity.
   - Where it would be subject to dust.
   - Where it would be positioned on an incline or unstable place.
   - Above connection cords or on the floor under which there is piping.
   - Where it could damage the car's fittings (spare tire, etc.) in or under the trunk.

1. **Evite instalar esta unidad en los siguientes lugares**
   - Donde esté directamente expuesta a la luz solar, al calor de un calefactor o en un lugar con temperatura muy alta.
   - Donde esté expuesta a la lluvia, salpicaduras de agua o humedad excesiva.
   - Donde haya polvo.
   - En lugares inclinados o inestables.
   - Sobre los cordones de conexión o en el piso debajo del cual se encuentra la tubería.
   - Donde podría dañar los accesorios del automóvil (neumático de repuesto, etc.) en/o debajo del baúl.

1. **Eviter l'installation dans les endroits suivants**
   - *Où il risque d'être exposer directement au soleil ou chauffé directement par le chauffage ou dans un endroit très chaud.*
   - *Où il risque d'être mouillé par la pluie, les flaques d'eau ou dans une forte humidité.*
   - *Dans les endroits poussiéreux.*
   - *Où il serait positionné sur une surface inclinée ou instable.*
   - *Au-dessus des cordons de raccordements ou sur le plancher sous lequel il y a une tuyauterie.*
   - *Là où il pourrait endommager des accessoires de la voiture (roue de secours, etc.) dans ou sous le coffre.*

2. Before drilling holes in the trunk to install the unit, make sure that there is a sufficient space under the trunk so that you do not drill holes in the fuel tank, etc.
3. Firmly install the unit using the provided screws.

2. Antes de perforar orificios en el baúl para instalar la unidad, asegúrese que haya suficiente espacio debajo del baúl ya que podría llegar a perforar el depósito de combustible, etc.
3. Instale firmemente la unidad utilizando los tornillos suministrados.

2. *Avant de percer des trous dans le coffre pour installer l'appareil, s'assurer qu'il y a un espace suffisant sous le coffre pour ne pas faire de trous dans le réservoir de carburant, etc.*
3. *Installer fermement l'appareil en utilisant les vis fournies.*

A. Example of installation

1. Install the mounting brackets on the side panels of the unit using screws (M4 x 8 mm). (Fig. b)

A. Ejemplo de instalación

1. Instale las ménsulas de montaje en los paneles laterales de la unidad utilizando tornillos (M4 x 8 mm). (Fig. b)

A. Exemple d'installation

1. *Installer les supports de montage sur les panneaux latéraux de l'appareil en utilisant des vis (M4 x 8 mm). (Fig. b)*

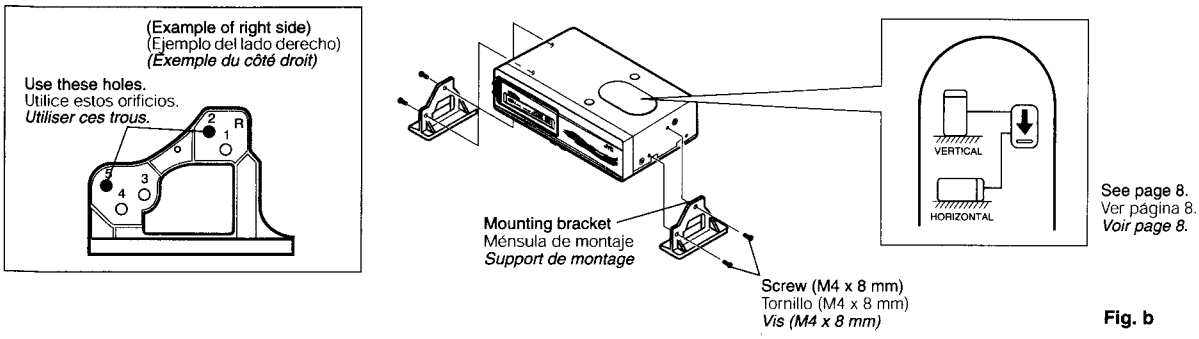


Fig. b

2. Install the unit on the floor of the trunk using tapping screws. (Fig. c)

2. Instale la unidad en el piso del baúl usando tornillos roscachapa. (Fig. c)

2. *Installer l'appareil sur le plancher du coffre en utilisant des vis auto-taraudeuses. (Fig. c)*

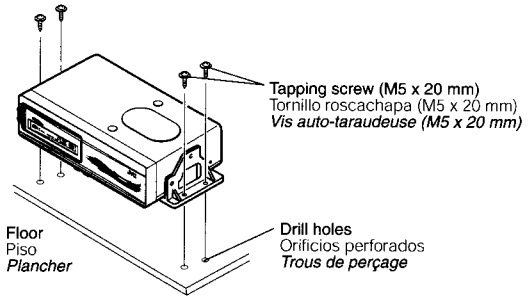


Fig. c

B. Example of other installations

- **When installing the CD changer upright on the trunk floor. (Fig. d)**

B. Ejemplo de otras instalaciones

- **Cuando instala el cambiador de CD verticalmente sobre el piso del portaequipaje. (Fig. d)**

B. Exemple d'autres installations

- **Installation du changeur CD droit sur le plancher du coffre. (Fig. d)**

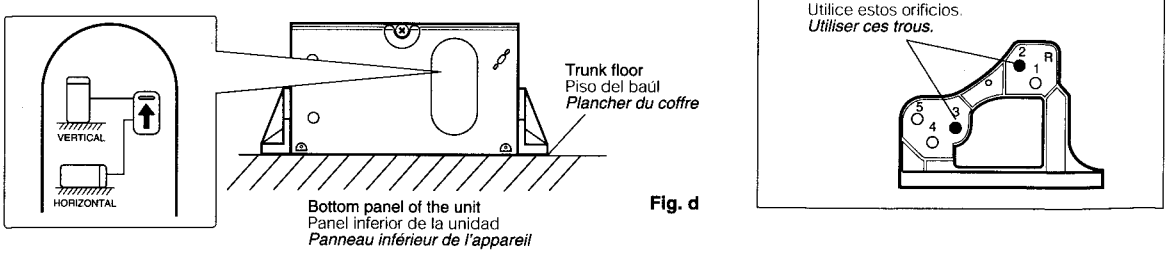


Fig. d

Notes:
1. To install, refer to the above "A. Example of installation".
2. When the CD changer is installed upright, set the selector located at the bottom to the "VERTICAL" position. (When it is installed horizontally, be sure to set the selector to the "HORIZONTAL" position.)
   • When installing upright, securely install to the trunk floor.

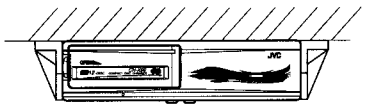
Notas:
1. En cuanto a la instalación, refiérase al "A. Ejemplo de instalación" mencionado.
2. Cuando instala el cambiador de CD verticalmente, coloque el selector ubicado en la parte inferior en la posición "VERTICAL". (Cuando lo instale horizontalmente asegúrese de colocar el selector en la posición "HORIZONTAL".)
   • Cuando se instale vertical, colóquelo firmemente sobre el piso del baúl.

Remarques:
1. *Pour l'installation, se reporter à "A. Exemple d'installation" précédent.*
2. *Si le changeur CD est installé droit, mettre le sélecteur situé en bas sur la position "VERTICAL". (Quand il est installé horizontalement, s'assurer de bien régler le sélecteur sur la position "HORIZONTAL".)*
   • *En installant droit, monter fermement au plancher du coffre.*

• When installing the CD changer to hang in the trunk space. (Fig. e)

• Cuando instala el cambiador de CD colgado en el compartimiento del portaequipaje. (Fig. e)

• Installation du changeur CD suspendu dans le coffre. (Fig e)



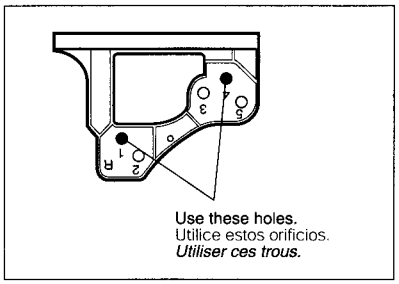
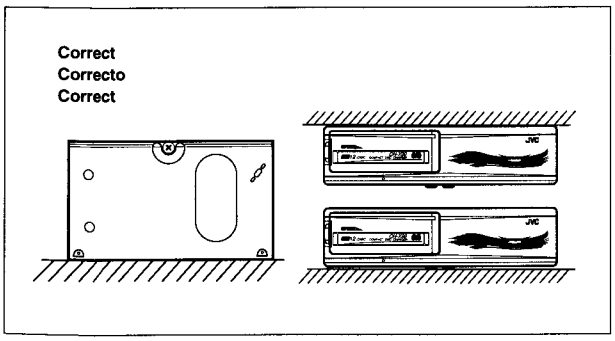


Fig. e

Note:
To install, refer to the above "A. Example of installation".

Nota:
Para instalarlo refiérase al "A. Ejemplo de instalación" de arriba.

Remarque:
Pour l'installation, se reporter à "A. Exemple d'installation" précédent.



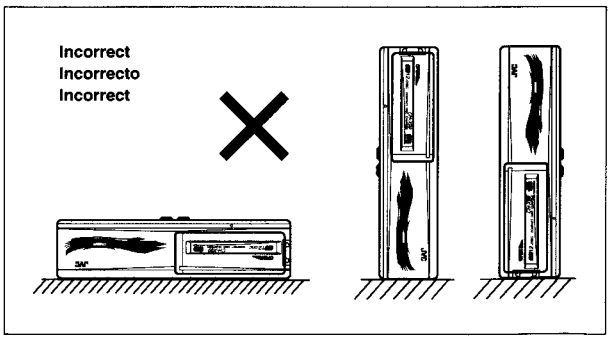


Fig. f

ELECTRICAL CONNECTIONS

To prevent short circuits from occurring, while making connections, keep the battery's negative terminal disconnected.
We recommend that you make all electrical connections (see Fig. g/h) before installing the unit. If you're not sure of your ability to correctly install this unit, have it installed by a qualified service technician.

Note:
This unit is designed for 12 volts DC, Negative Ground. If your vehicle does not have a 12 volt negative ground electrical system, you need a voltage inverter which can be bought from a JVC car audio dealer.
- Be sure to ground this unit to the car's chassis.

Connections (A)

This changer can be connected to JVC KD-SX/KS-FX series receivers that have the Changer Control function.

CONEXIONES ELECTRICAS

Para evitar cortocircuitos, mantenga desconectado el terminal negativo de la batería durante las conexiones.
Le recomendamos hacer todas las conexiones eléctricas (ver Fig. g/h) antes de instalar la unidad. Si no estuviera seguro de su habilidad para colocarla correctamente, hágala instalar por un técnico de servicio calificado.

Nota:
Esta unidad está diseñada para 12 V de CC, masa negativa. Si su vehículo no estuviera provisto de un sistema eléctrico de masa negativa de 12 voltios, necesitará un inversor de tensión que puede adquirir en un concesionario JVC de equipos de audio para automóviles.
- Asegúrese de conectar a masa esta unidad al chasis del automóvil.

Conexiones (A)

Este cargador puede ser conectado a los receptores de la serie KD-SX/KS-FX de JVC que tienen la función de control del cambiador.

RACCORDEMENTS ELECTRIQUES

Pour éviter tout court-circuit alors que vous effectuez les raccordements, laisser la borne négative de la batterie non branchée.
Nous vous conseillons de faire tous les raccordements électriques (voir la Fig. g/h) avant de mettre l'appareil en place. Si vous n'êtes pas sûr de vous, faites-le installer par un technicien qualifié.

Remarque:
Cet appareil est conçu pour un courant continu de 12 volts, à masse négative. Si votre véhicule ne fournit pas une masse négative de 12 volts, il vous faut un convertisseur de tension, que vous pouvez vous procurer chez un revendeur d'autoradios JVC.
- *Bien raccorder le câble de mise à la masse de cet appareil au châssis de la voiture.*

Raccordements (A)

Ce changeur peut être raccordé aux récepteurs de série KD-SX/KS-FX JVC qui ont la fonction de commande de changeur.

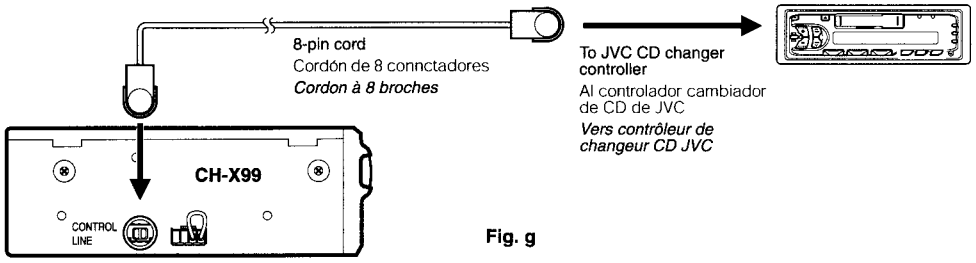


Fig. g

Connections (B)

When connecting to JVC KD-GS/KS-RT series receivers, use the KS-U14K option cord.

Conexiones (B)

Para conectarlo a la serie de receptores KD-GS/KS-RT de JVC, emplee un cable opcional KS-U14K.

Raccordements (B)

En raccordant aux récepteurs séries KD-GS/KS-RT JVC, utiliser le cordon KS-U14K en option.

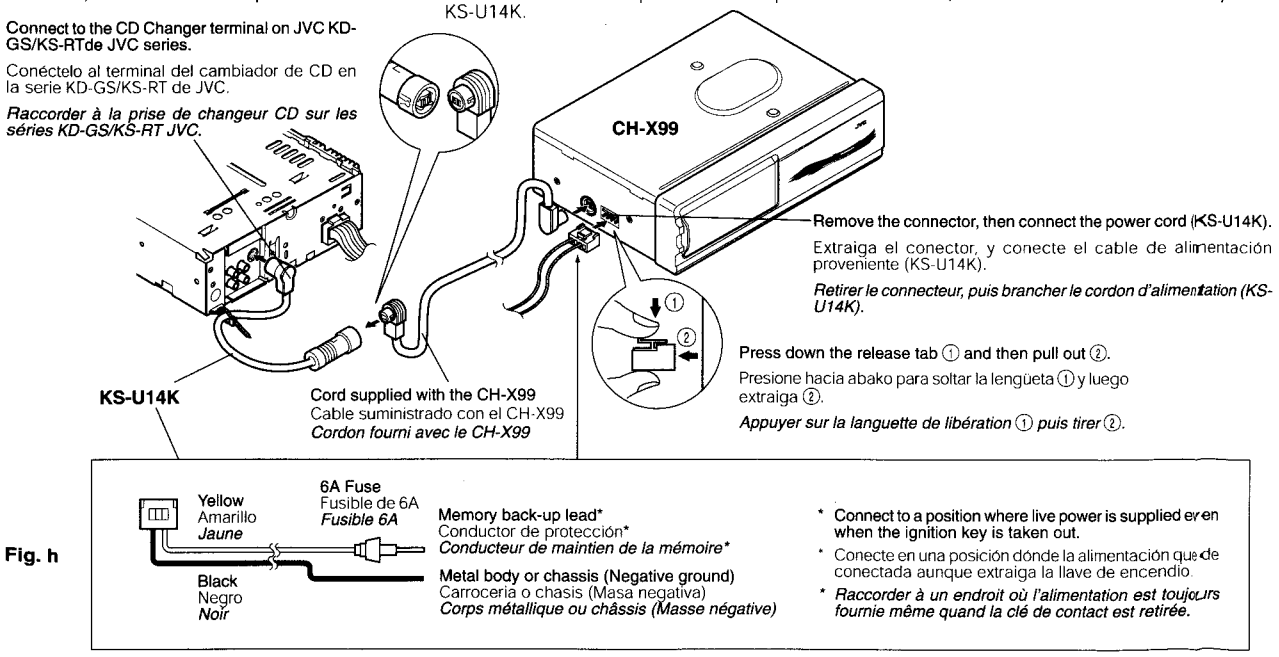

Connect to the CD Changer terminal on JVC KD-GS/KS-RTde JVC series.
Conéctelo al terminal del cambiador de CD en la serie KD-GS/KS-RT de JVC.
Raccorder à la prise de changeur CD sur les séries KD-GS/KS-RT JVC.
CH-X99
Remove the connector, then connect the power cord (KS-U14K).
Extraiga el conector, y conecte el cable de alimentación proveniente (KS-U14K).
Retirer le connecteur, puis brancher le cordon d'alimentation (KS-U14K).
Press down the release tab ① and then pull out ②.
Presione hacia abako para soltar la lengüeta ① y luego extraiga ②.
Appuyer sur la languette de libération ① puis tirer ②.
KS-U14K
Cord supplied with the CH-X99
Cable suministrado con el CH-X99
Cordon fourni avec le CH-X99
Yellow
Amarillo
Jaune
6A Fusse
Fusible de 6A
Fusible 6A
Black
Negro
Noir
Memory back-up lead*
Conductor de protección*
Conducteur de maintien de la mémoire*
Metal body or chassis (Negative ground)
Carrocería o chasis (Masa negativa)
Corps métallique ou châssis (Masse négative)
* Connect to a position where live power is supplied even when the ignition key is taken out.
* Conecte en una posición dónde la alimentación queda conectada aunque extraiga la llave de encendido.
* Raccorder à un endroit où l'alimentation est toujours fournie même quand la clé de contact est retirée.

Fig. h

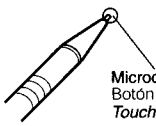
Note:
- The CD magazine cannot be ejected when the memory back-up lead or cord is disconnected or the fuse is blown.

Nota:
- El magazín de CD no puede ser eyectado cuando el cordón o conductor de protección de memoria está desconectado o el fusible está quemado.

Remarque:
- *Le magasin CD ne peut pas être éjecté si le fil ou le cordon de maintien mémoire est débranché ou si le fusible est grillé.*

Microcomputer reset button

After completing installation and connection, load the magazine and press the reset button using a ball-point pen or other pointed instrument to reset the microcomputer.
Normally do not use this button. However, when the power supply is interrupted such as for replacement of the car's battery, press this button. Also press it when the built-in microcomputer does not operate properly due to noise or when the changer does not function correctly when the controller is operated.



Microcomputer reset button
Botón de reposición de la microcomputadora
Touche de remise à zéro du microprocesseur

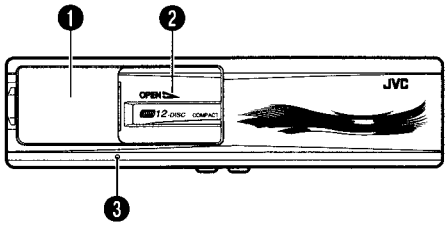
Botón de reposicionamiento del microcomputador

Después de completar la instalación y la conexión, cargue el magazini y presione el botón de reposicionamiento utilizando un bolígrafo u otro instrumento en punta para reposicionar el microcomputador.
Normalmente, este botón no se usa. Sin embargo, cuando la fuente de energía es interrumpida como ser en caso de reemplazo de la batería del automóvil, presione este botón. Presiónelo también cuando el microcomputador incorporado no funcione adecuadamente debido al ruido o si el cambiador no funciona correctamente cuando se opera el controlador.

Touche de remise à zéro du microprocesseur

Après avoir terminer l'installation et les raccordements, charger le magasin puis appuyer sur la touche de remise à zéro en utilisant un stylo à bille ou un autre instrument pointu pour réinitialiser le microprocesseur. Normalement ne pas utiliser cette touche.
Cependant, quand l'alimentation est interrompue comme pour le remplacement de la batterie de la voiture, appuyer sur cette touche. La presser également si le microprocesseur ne fonctionne pas correctement à cause de parasites ou si le changeur ne fonctionne pas correctement quand le contrôleur est utilisé.

LOCATION OF CONTROLS | UBICACION DE LOS CONTROLES | EMPLACEMENT DES COMMANDES



❶ CD magazine slot
❷ Door
❸ Microcomputer reset button

❶ Ranura del magazín de CD
❷ Puerta
❸ Botón de reposición del microcomputador

❶ *Fenêtre de magasin CD*
❷ *Volet*
❸ *Touche de remise à zéro du microprocesseur*

HANDLING COMPACT DISCS AND MAGAZINES | MANIPULACION DE COMPACT DISC Y MAGAZINES | MANIPULATION DES DISQUES AUDIONUMERIQUES ET DES MAGASINS

How to handle CDs

- Use compact discs with the mark shown.

Cómo manipular compact disc

- Utilice compact disc con la marca indicada.

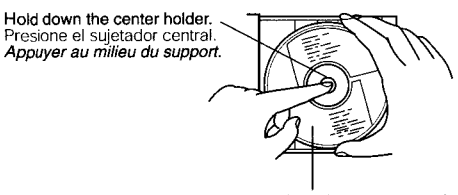
Manipulation des disques audionumériques

- *Utiliser des disques audionumériques avec la marque montrée.*

- Do not touch the recorded surface of the disc (reflective side, opposite to the label) when handling the discs.
- **Storage**
  Make sure to keep discs in their cases. If discs are piled on top of one another without their cases, they may be damaged. Do not put discs where they will be exposed to direct sunlight or in a place subject to high temperatures and humidity. Avoid leaving discs in your car.

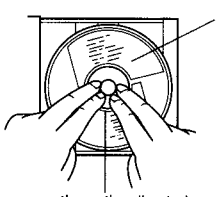
- No toque la superficie grabada (lado con reflejos, opuesto a la etiqueta) mientras manipula los discos.
- **Cómo guardar los discos**
  Guarde los discos en sus cajas. No apile discos sin sus cajas, ya que podrían dañarse. No ponga los discos donde queden expuestos a la luz solar directa o en lugares con alta temperatura o humedad. No los deje en el automóvil.

- *Ne pas toucher à la surface enregistrée du disque (la face réfléchissante, le verso de l'étiquette) en manipulant les disques.*
- **Stockage**
  Bien conserver les disques dans leurs boîtes. Si des disques sont empilés les uns sur les autres sans leurs boîtes, ils peuvent être abîmés. Ne pas mettre des disques où ils pourraient être exposés à la lumière directe du soleil ou dans un endroit sujet à de fortes températures ou à l'humidité. Eviter de laisser des disques dans votre voiture.



Hold down the center holder.
Presione el sujetador central.
Appuyer au milieu du support.

Lift it out without touching the recorded surface.
Levántelo para sacarlo sin tocar la superficie grabada.
Le lever sans toucher à la surface enregistrée.



Insert with the label facing up.
Inserte con la etiqueta hacia arriba.
Mettre en place avec l'étiquette au-dessus.

Press gently on the disc to insert.
Presione suavemente el disco para insertalo.
Appuyer légèrement sur le disque pour le mettre en place.

Note:
CDs shaped like a heart, flower, etc. (specially-shaped CDs) can not be used with this unit. If this type of CD is loaded, it will cause a trouble.

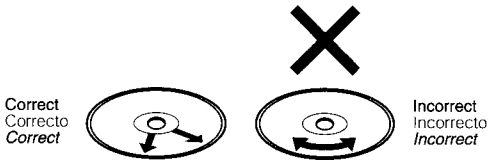
Nota:
Los CD con forma de corazón, flor, etc. (CD con forma especial), nopueden ser uasados con esta unidad. Si coloca tipos de CD, se producirá una falla.

Remarque:
Des CD en forme de coeur, de fleur, etc. (CD de forme spéciale) ne peuvent pas être utilisés avec cet appareil. Si ce type de CD est chargé, il causera un problème de fonctionnement.

- **Maintenance of discs**
- When fingerprints and dirt adhere to a disc, wipe the disc clean with a soft, dry cloth, wiping from the inside towards the edge. If it is difficult to clean, wipe the disc with a cloth moistened with water.
- Do not use record cleaners, benzine, alcohol or antistatic agents.
- Do not damage the label side or stick paper or adhesive to the surface.

- **Mantenimiento de los discos**
- Limpie las huellas digitales y el polvo que se adhiere sobre el disco con un paño limpio y suave desde el centro hacia los bordes. Si no salen, límpielo con un paño humedecido con agua.
- No utilice limpiadores para discos, bencina, alcohol o agentes antiestáticos.
- No dañe el lado con etiqueta ni pegue papeles o adhesivos en la superficie.

- **Entretien des disques**
- *Si des empreintes digitales ou de la poussière adhèrent à un disque, essuyer le disque avec un tissu doux, sec et propre, en essuyant de l'intérieur vers l'extérieur. S'il est difficile à nettoyer, essuyer le disque avec un tissu humidifié avec de l'eau.*
- *Ne pas utiliser de nettoyants, benzine, alcool ou agent antistatique.*
- *Ne pas endommager le côté de l'étiquette ou coller du papier ou de la bande adhésive sur la surface.*



How to handle magazines

- **Care in handling magazines**
1. **Always keep twelve disc trays loaded in the magazine.**
2. When removing or inserting disc trays, hold the magazine horizontally.
3. Place compact discs on trays before inserting them in a magazine. Never put discs directly into magazines.

Cómo manipular los magazines

- **Cuidado en la manipulación de magazines**
1. **Mantenga siempre los doce portadiscos colocados en el magazín.**
2. Al retirar o introducir las bandejas de discos, sujete el magazín horizontal-mente.
3. Coloque los compact disc sobre las bandejas antes de introducirlas en un magazín. No ponga nunca los discos directamente en los magazines.

Manipulation des magasins

- **Faire attention en manipulant les disques**
1. **Toujours laisser douze tiroirs de disque chargés dans le magasin.**
2. *En retirant ou en introduisant les tiroirs de disque, tenir le magasin horizontalement.*
3. *Placer des disques audionumériques sur des tiroirs avant de les introduire dans un magasin. Ne jamais mettre directement des disques dans les magasins.*

4. Do not expose it to high temperatures or direct sunlight.
5. Do not disassemble magazines.
6. Take care not to drop or hit magazines. Do not apply excessive pressure to disc trays which have been removed from magazines.
7. Never apply solvents such as benzine, thinner and insecticide to the magazine or disc trays. These solvents may erode their surfaces.

4. No lo exponga a la luz solar directa o a temperaturas elevadas.
5. No desarme los magazines.
6. No los deje caer ni los golpee. No aplique demasiada presión sobre las bandejas de discos extraídas de los magazines.
7. No use jamás solventes tales como bencina, diluyente o insecticida en el magazín o las bandejas. Los mismos podrían perjudicar su superficie.

4. *Ne pas exposer les magasins à de hautes températures ni aux rayons directs du soleil.*
5. *Ne pas démonter les magasins.*
6. *Faire attention de ne pas faire tomber ou cogner les magasins. Ne pas appliquer de pression excessive sur les tiroirs de disque qui ont été retirés des magasins.*
7. *Ne jamais appliquer de solvants comme de la benzine, du diluant ou des insecticides sur le magasin ou les tiroirs de disque. Ces solvants peuvent éroder leurs surfaces.*

* Additional magazine (XC-M120) must be purchased separately.

* Los magazines adicionales (XC-M120), deben ser adquiridos separadamente.

* *Des magasins supplémentaires (XC-M120) doivent être achetés séparément.*

- **How to load discs**
- The discs are in numerical order, with 1 at the bottom and 12 at the top. Load discs in the magazine in the required order.

1. Disc trays can be removed from magazines.
   ① While pressing the RELEASE button...
   ② Slide the disc tray partly out.

- **Colocación de discos**
- Los discos se colocan por orden numérico, con el 1 abajo y 12 arriba. Coloque los discos en el magazín en el orden deseado.

1. Las bandejas pueden sacarse de los magazines.
   ① Mientras presiona el botón RELEASE ...
   ② Deslice hacia afuera parcialmente el portadisco.

- **Chargement des disques**
- *Les disques sont par ordre numérique, avec 1 en bas et 12 en haut. Charger les disques dans le magasin dans l'ordre voulu.*

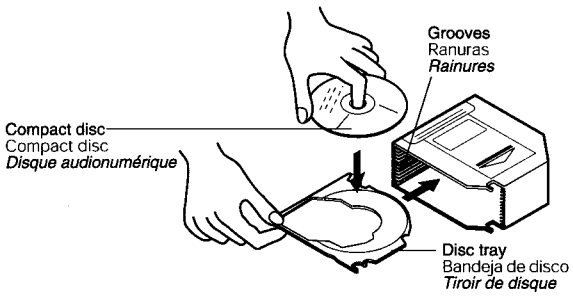
1. *Les tiroirs de disque peuvent être retirés des magasins.*
   ① *Tout en appuyant sur la touche RELEASE...*
   ② *Faire coulisser le tiroir de disque en partie vers l'extérieur.*

2. Pull the disc tray completely out of the magazine and place a CD on it with its label side up.

3. Line up the disc tray with the grooves in the magazine, and push the disc tray all the way in. Never bend or force the disc tray into the magazine. It is not necessary to depress the disc tray RELEASE button when inserting the disc tray.
   - Check that the disc tray is securely inserted into the magazine. If a CD becomes disengaged from the disc tray, reposition it on the disc tray.

Notes:
- If a disc tray is inserted at an angle, it may cause a malfunction.

2. Saque completamente la bandeja del magazín y coloque el disco con la etiqueta hacia arriba.



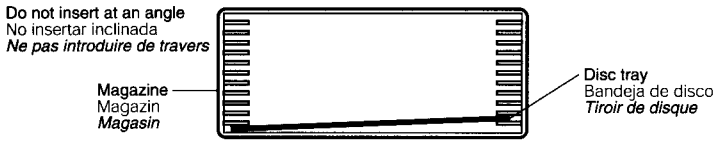
3. Alinee la bandeja con las ranuras del magazín e introdúzcala completamente. Nunca doble o fuerce la bandeja para que entre en el magazín. No es necesario presionar el botón RELEASE del portadisco cuando inserta el mismo.
   - Verifique que el portadisco esté insertado firmemente dentro del magazín. Si un CD se desengancha del portadisco, reposiciónelo en el mismo.

Notas:
- Si inserta la bandeja inclinada, se producirán fallas de funcionamiento.

2. Tirer le tiroir de disque complètement à l'extérieur du magasin et placer un disque audionumérique sur le plateau avec l'étiquette au dessus.

3. Aligner le tiroir de disque avec les rainures dans le magasin, et pousser complètement le tiroir de disque. Ne jamais fausser ou forcer le tiroir de disque dans le magasin. Il n'est pas nécessaire d'appuyer sur la touche de libération (RELEASE) du tiroir de disque en introduisant le tiroir.
   - *Vérifier que le tiroir de disque est bien introduit dans le magasin. Si un disque devient désengagé du tiroir de disque, le remettre sur le tiroir.*

Remarques:
- *Si un tiroir de disque est introduit de travers, il peut causer un mauvais fonctionnement.*



- There are openings in the disc trays through which signals are read from the discs. These openings leave part of the shiny side of the disc exposed. Be careful not to touch the shiny surface of the disc.
- It is not possible to play a compact disc if it is installed upside down.
- Be sure to insert the twelve disc trays when using the magazine. If not, the CD changer may not operate correctly.

How to load a magazine

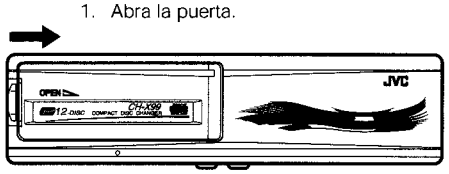
1. Open the door.

2. Load a magazine.
   - **Load a magazine into the CD changer with the △ mark on top (Fig. i) and the CD insertion side to the right.**
   - If a magazine's label partly peels off, it may cause a malfunction. If this happens, remove the label or stick it on firmly again.

- Las bandejas tienen aberturas por las cuales son leídas las señales de los discos. Estas aberturas dejan expuesta parte del lado brillante del disco. Tenga cuidado de no tocar la superficie brillante del disco.
- No es posible reproducir compact disc colocados al revés.
- Asegúrese de insertar los portadiscos de doce discos cuando utiliza el magazín. De lo contrario, el cambiador de CD puede no funcionar correctamente.

Colocación de un magazín

1. Abra la puerta.



2. Coloque un magazín.
   - **Coloque un magazín en el cambiador de CD con la marca "△" apuntando hacia arriba (Fig. i) y el lado de inserción del CD hacia la derecha.**
   - La etiqueta despegada de un magazín puede producir fallos de funcionamiento. En tal caso, saque la etiqueta o fíjela bien nuevamente.

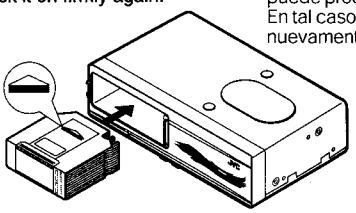


Fig. i

- *Il y a des ouvertures dans les tiroirs de disque à travers lesquelles les signaux sont lus des disques. Ces ouvertures laissent une partie de la face brillante du disque exposée. Faire attention de ne pas toucher à la surface brillante du disque.*
- *Il n'est pas possible de lire un disque audionumérique s'il est installé sens dessus dessous.*
- *Bien introduire les douze tiroirs de disque en utilisant le magasin. Sinon, le changeur CD peut ne pas fonctionner correctement.*

Chargement d'un magasin

1. Ouvrir le volet.

2. Charger un magasin.
   - **Charger un magasin dans le chargeur CD avec la marque △ en haut (Fig. i) et le côté d'insertion CD sur la droite.**
   - *Si l'étiquette d'un magasin se décolle, elle peut causer un mauvais fonctionnement. Si cela arrive, retirer l'étiquette ou la recoller correctement.*

Caution:
- **Do not insert your hands or any foreign object into the loading slot as you may be injured or cause malfunctions or damage.**

3. Close the door .
   - The door should be closed other than when a magazine is loaded or unloaded.

How to unload a magazine

To unload a magazine, open the door fully to the right side to eject the magazine.

Precausion:
- **No introduzca la mano o algún objeto por la ranura de carga pues podría lastimarse o producir fallas de funcionamiento o daños.**

3. Cierre la puerta.
   - La puerta debe estar cerrada excepto al poner o sacar un magazín.

Cómo retirar un magazín

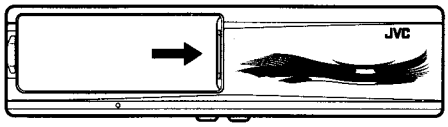
Para colocar un cargador, abra la puerta totalmente hacia el lado derecho para eyectar el magazin.

Attention:
- **Ne pas introduire vos mains ou d'objet étranger dans la fenêtre de chargement, vous pourriez vous blesser ou causer des mauvais fonctionnements ou dommages.**

3. *Fermer le volet.*
   - *Le volet doit être fermé en dehors du chargement ou du retrait d'un magasin.*

Retrait d'un magasin

Pour décharger un magasin, ouvrir complètement le volet vers la droite pour éjecter le magasin.



Note:
When the magazine cannot be ejected, push in the magazine and play the 12th disc once more; when play has ended, repeat the above procedure (i.e., open to the door).

- **Listening to CDs**
  - This unit does not have operation buttons to play CDs. CD operations can be performed using the JVC CD changer controller, etc. connected to this unit.
    For CD operations, refer to the Instructions of the CD Changer Controller.

Nota:
Cuando el magazín no pueda ser eyectado, presione el magazín hacia adentro y reproduzca el disco no. 12 una vez más; cuando la reproducción haya terminado, repita el procedimiento de arriba (para abrir la puerta).

- **Reproducción de CDs**
  - Esta unidad no tiene botones de operación para reproducción de CD. Las operaciones de CD pueden ser ejecutadas utilizando el controlador cambiador de CD de JVC, etc., conectado a esta unidad.
    Para las operaciones de CD refiérase a las instrucciones del controlador cambiador de CD.

Remarque:
Si le magasin ne peut pas être éjecté, pousser sur le magasin et lire une fois de plus le 12ème disque; quand la lecture est terminée, refaire la procédure précédente (c'est à dire; ouvrir le volet).

- **Ecoute des disques audionumériques**
  - *Cet appareil n'a pas de touches de fonctionnement pour lire les disques. Les opérations CD peuvent être effectuées en utilisant le contrôleur de changeur CD JVC, etc. raccordé à cet appareil.*
    Pour les opérations CD, se reporter au manuel d'instructions du contrôleur de changeur CD.

SPECIFICATIONS

CD CHANGER SECTION

Frequency response	: 5 – 20,000 Hz
Dynamic range	: 93 dB
S/N ratio	: 96 dB
Distortion	: 0.006 %
Wow & flutter	: Less than measurable limit
Output terminal	: Analog (8 pin x 1), 1.5 V (Full scale)/Less than 1 kΩ

GENERAL

Power requirement	
Operating voltage	:DC 14.4 V (11 V — 16 V Allowable)
Grounding system	: Negative ground
Dimensions (W x H x D)	: 274 x 75 x 180 mm (10-13/16" x 3" x 7-1/8")
Mass	: 2.0 kg (4.5 lbs.) (excluding accessories)

Design and specifications subject to change without notice.

ESPECIFICACIONES

SECCION DEL CAMBIADOR DE CD

Respuesta de frecuencia	: 5 - 20.000 Hz
Gama dinámica	: 93 dB
Relación S/R	: 96 dB
Distorción	: 0,006 %
Lloro y tremolación	: Inferior al límite mesurable
Terminal de salida	: Analógica (8 conectadores x 1), 1,5 V (escala total/Menos de 1 k ohmio)

GENERALIDADES

Alimentación	
Tensión de funcionamiento	: 14,4 V CC (11 V - 16 V permisible)
Sistema de puesta a masa	: Masa negativa
Dimensiones (An x Al x Pr)	: 274 x 75 x 180 mm
Peso	: 2,0 kg (excluyendo accesorios)

El diseño y las especificaciones están sujetos a cambio sin aviso previo.

CARACTERISTIQUES TECHNIQUES

SECTION CHANGEUR DE DISQUE AUDIONUMERIQUE

Réponse en fréquence	*: 5 à 20.000 Hz*
Gamme dynamique	*: 93 dB*
Rapport signal/bruit	*: 96 dB*
Distortion	*: 0,006 %*
Pleurage et scintillement	*: Inférieur à la limite mesurable*
Borne de sortie	*: Analogique (8 brochesx1), 1,5V (pleine échelle) inférieure à 1 kΩ*

GENERALES

Alimentation	
Tension de fonctionnement	*: CC 14,4 V (11 V à 16 V possible)*
Système de mise à la masse	*: Masse négative*
Dimensions (L x H x P)	*: 274 x 75 x 180 mm*
Masse	*: 2,0 kg (sans les accessoires)*

Présentation et caractéristiques modifiables sans préavis.

If a kit is necessary for your car, consult your telephone directory for the nearest car audio speciality shop.

Si fuera necesario un juego de instala-ción para su automóvil, consulte la guía telefónica para ubicar la tienda espe-cialista en audio para automóviles más cercana.

Si un kit est nécessaire pour votre voiture, consulter votre annuaire téléphonique pour chercher le revendeur d'accessoires audio pour automobile le plus proche.

JVC
VICTOR COMPANY OF JAPAN, LIMITED

Printed in Singapore
1097 MNMUIAJES
EN,SP,FR

CH-X99 | COMPACT DISC AUTOMATIC CHANGER

Location of main parts

■ Top side view

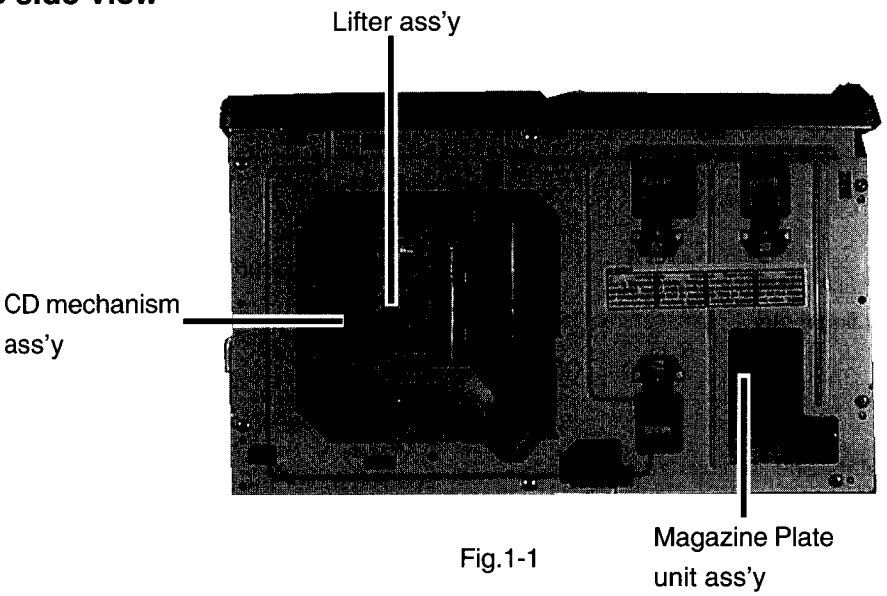


Fig.1-1

■ Bottom side view

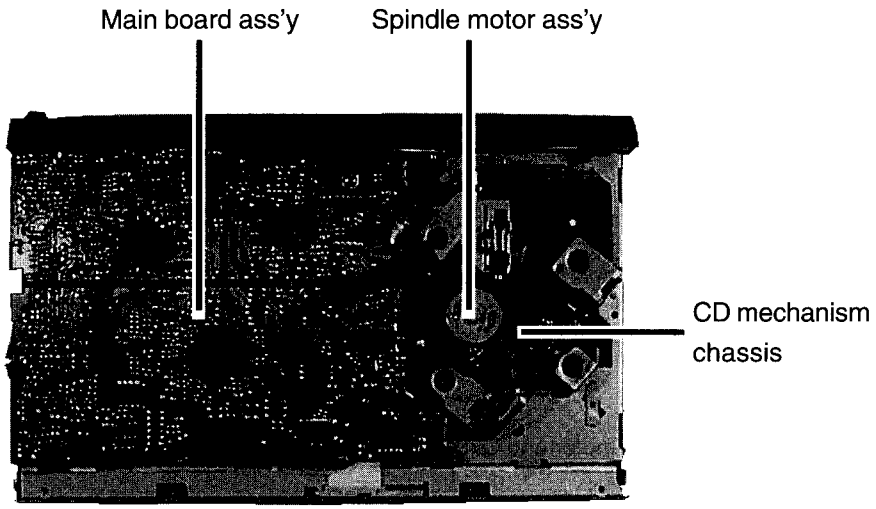


Fig.1-2

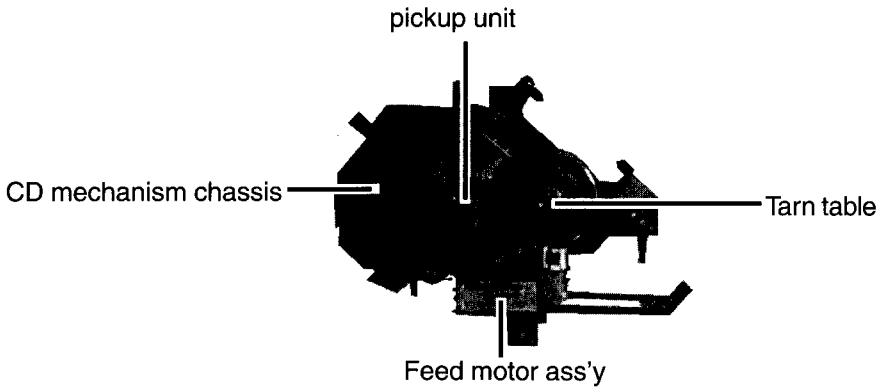


Fig.1-3

■ Positioning diagram of switches and motors, etc.

◆ Top view

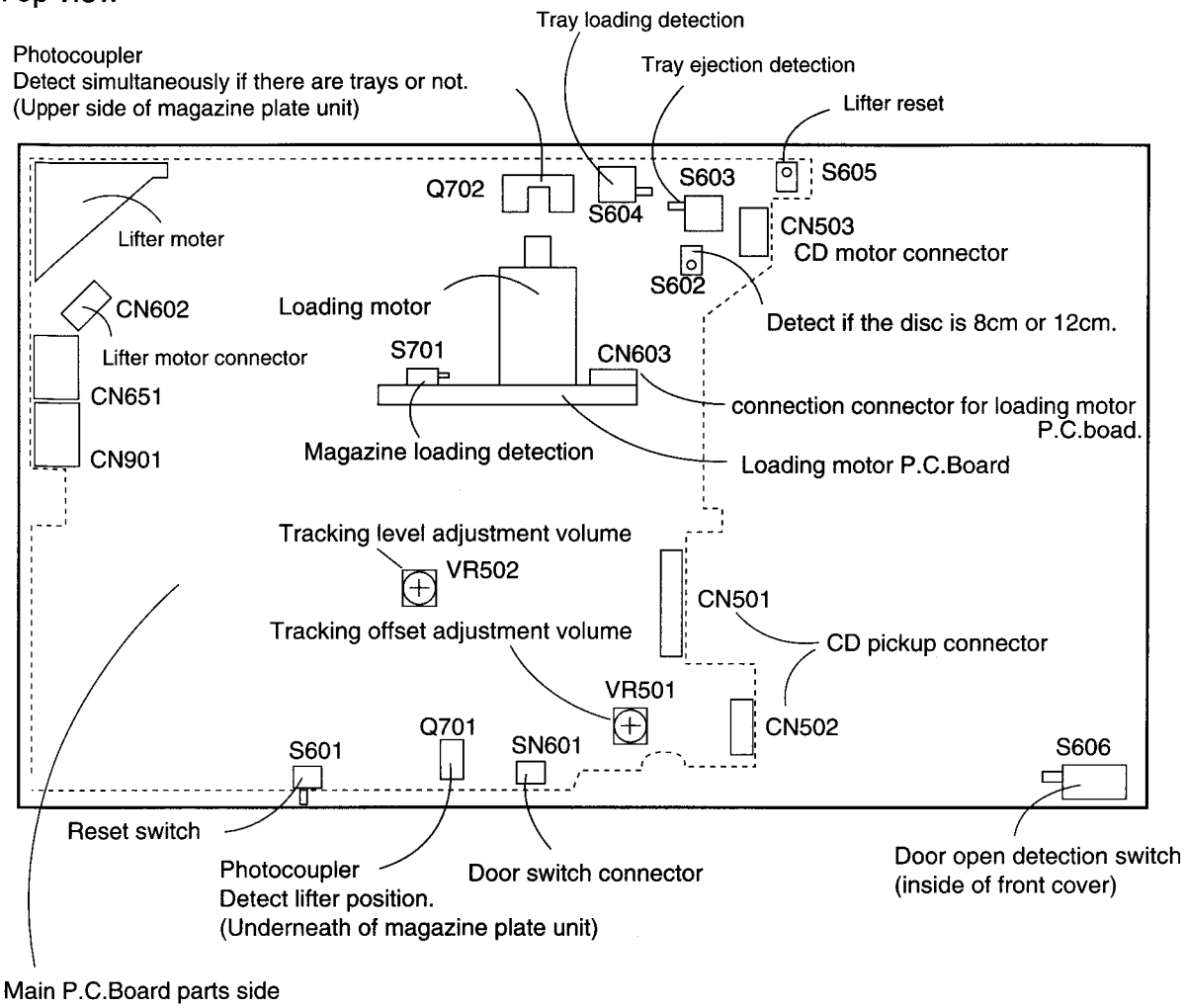


Fig.1-4

★ All components except lifter motor and Q702 photocoupler indicater in the fig.1-4 can not be seen from the top .

Removal of main parts

Procedures for removal of parts

(Disassemble the component parts considering assembly)

◆ MainP.C.B.Ass'y

Remove the four screws retaining the top cover, bottom cover, front panel ass'y and main P.C.B. Remove the flexible wire from the CD mechanism ass'y.

◆ Lifter Ass'y

Remove the top cover, bottom cover, front panel ass'y, top plate ass'y, rear panel ass'y and lifter ass'y.

◆ CD Mechanism

Remove the top cover, bottom cover, front panel ass'y, top plate ass'y, rear panel ass'y, and CD mechanism ass'y.

◆ Magazine Plate Unit

Remove the top cover, bottom cover, front panel ass'y, top plate ass'y, rear panel ass'y and lifter ass'y and magazine plate unit.

◆ Loading Gear Ass'y

Remove the top cover, bottom cover, front panel ass'y, top plate ass'y, rear panel ass'y, lifter ass'y, magazine plate unit ass'y and loading gear ass'y.

◆ Disassembly procedure for CH-X99

■ External case sections

◆ Top Cover (see Fig.2-1 ~ Fig.2-2)

1. Remove four retaining screws ① from the left and right.
2. Remove one screw ⑰ retaining the front side of top cover.
3. Remove by pushing the right side of top cover inward to lift it up.

◆ Bottom Cover (see Fig.2-3)

1. Remove two screws ② retaining the bottom cover.
2. Remove one screws ③ retaining center section of bottom cover.
3. Remove the terminalconnector from left side.

◆ Front Panel (see Fig.2-4. ~ Fig.2-6)

1. Slightly pull out the panel while disengaging the right and left tabs [A] .
2. Remove the door switch connector (CN601) from the front panel door in the center of main P.C.B.

Left side view

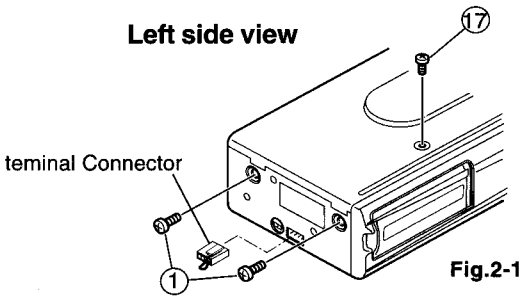


Fig.2-1

Right side view

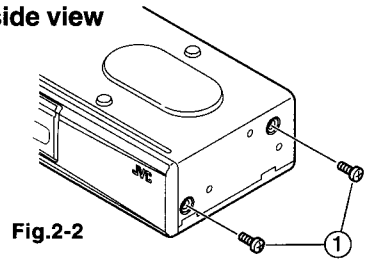


Fig.2-2

Bottom view

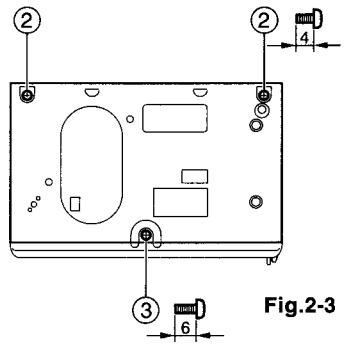


Fig.2-3

Right side view

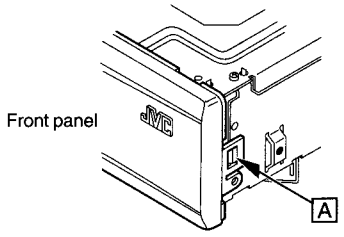


Fig.2-4

Left side view

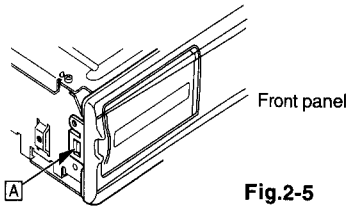


Fig.2-5

Magazin loading section

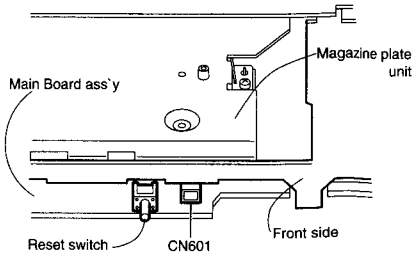


Fig.2-6

■ Mechanism section

(remove in the following order)

◆ Top Plate Ass'y (see Fig.2-7)

1. Remove the seven screws ⑥ retaining the top plate.
2. Lift up the top plate and slide it to the front so that the safety rod is vertical, then remove it from the right side.

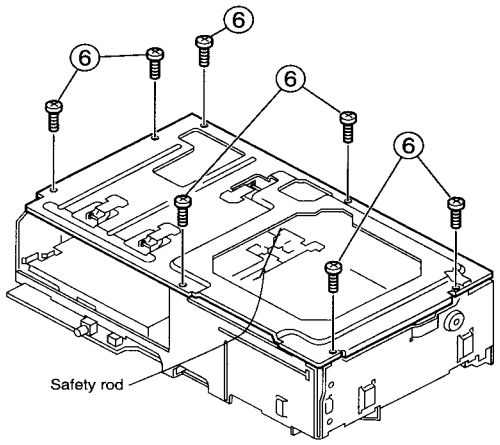


Fig.2-7-A

◆ Lower rod (see Fig.2-7-B)

1. Remove the one screw ⓐ retaing the R.slider bracket
2. Remove the Lower rod.

◆ Rear Panel (see Fig.2-7 ~ Fig.2-10)

1. Remove the lifter tension arm spring.
2. Remove the one E-washer ⑦ of lifter section.
3. Remove the lifter tension arm.

Note:
With the unit's front side facing you and the unit placed on its bottom, float the reset switch connected to the main P.C.B.

4. Turn the lifter motor clockwise from the main P.C.B. to elevate lifter to the uppermost position.(The torque of lifter motor is small.)
5. Remove three screws ⑧ retaining the rear panel to remove it.
6. Remove the flexible P.C.B. for the lifter ass'y sensor from the lifter motor P.C.B.connector.
7. Remove the front side arm of lifter ass'y, then pull the lifter ass'y towards the magazine slot and remove it from the rear loading arm.

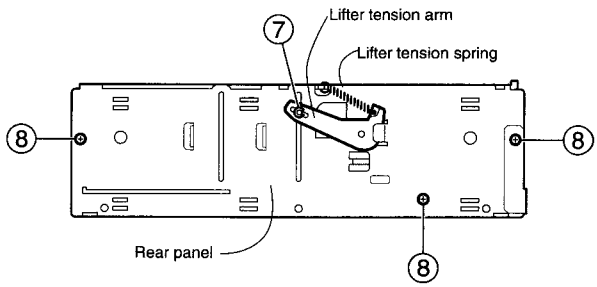


Fig.2-8

Rear bottom view

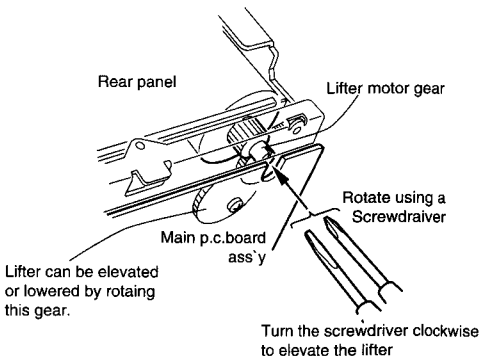

Rear panel
Lifter motor gear
Rotate using a Screwdraiver
Main p.c.board ass`y
Lifter can be elevated or lowered by rotaing this gear.
Turn the screwdriver clockwise to elevate the lifter

Fig.2-9

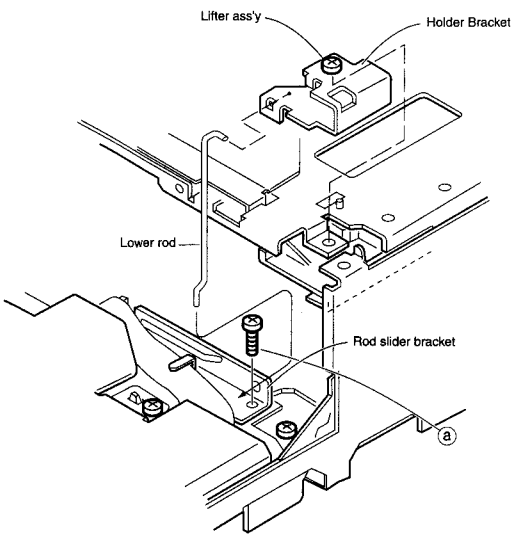


Fig.2-7-B

Rear side view

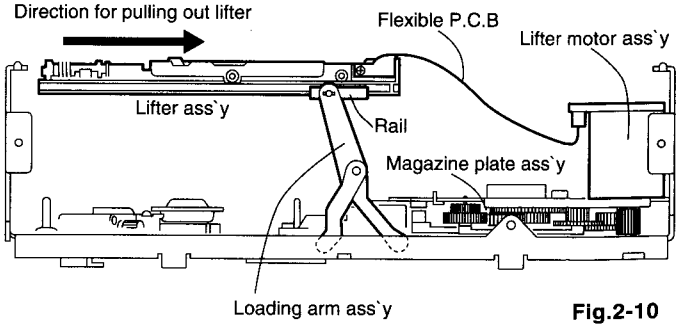


Fig.2-10

◆Magzine Plate Unit (see Fig.2-11)

1. Remove threee screws ⑨ and ① retaining the magazine plate unit.
2. Lift up the magazine plate unit to remove the lifter motor from the main P.B.C. connector.

◆Loading Gear Ass'y (see Fig.2-12～fig.2-11)

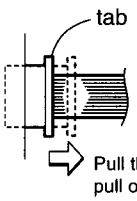
1. Remove one screw ⑪ retaining the loading gear and remove the connector between the main P.C.B. and motor P.C.B.

Note:
When the loading gear is removed, the internal gear is disengaged, so care should be taken when handling the gears. (Do not reassemble the gears by placing them in the wrong direction.)

2. Turn the slider gear counterclockwise (indicated by the arrow) and remove one screw ⑫ retaining the sensor.
3. Remove two screws ⑬ retaining the main P.C.B. to disengage the sensor.

◆CD Mechanism Ass'y (see Fig. 2-11 ～ Fig.2-13)

1. Remove CD mechanism's three flexible wires (CN501, CN502, CN503) from the main P.C.B. ass'y. (Pull the tabs in both side panels.)



2. Remove four tension springes between the CD mechanism and chassis.
3. Facing the front of the unit, remove the three screws ⑭ retaining the damper.
4. Remove the stopper by pressing section ⓐ indicated by the arrow to disengage the CD chassis hold arm.
5. Lift the chassis slightly and remove the CD mechanism ass'y, (Be careful - - the coil springs are easily removed.)

◆Main P.C.B.Ass'y

1. Remove four screws ⑬ and ⑮ retaining the main P.C.B. ass'y.
2. Remove the one screw ⑯ retaning the transister.

Top view

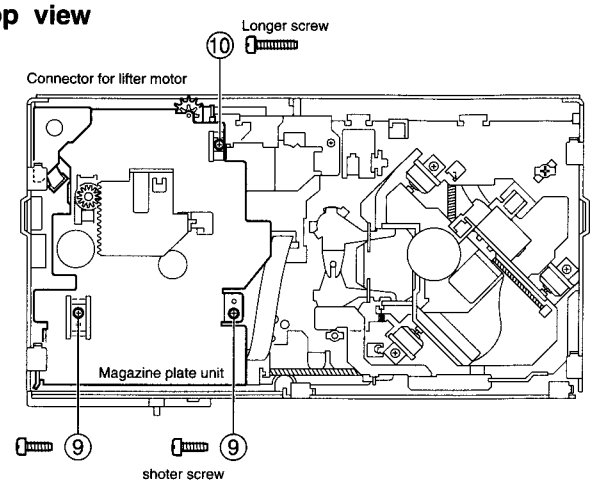


Fig.2-11

Top view

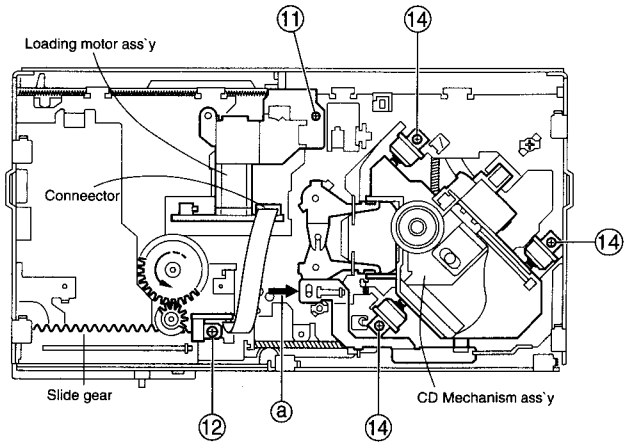


Fig.2-12

Bottom view

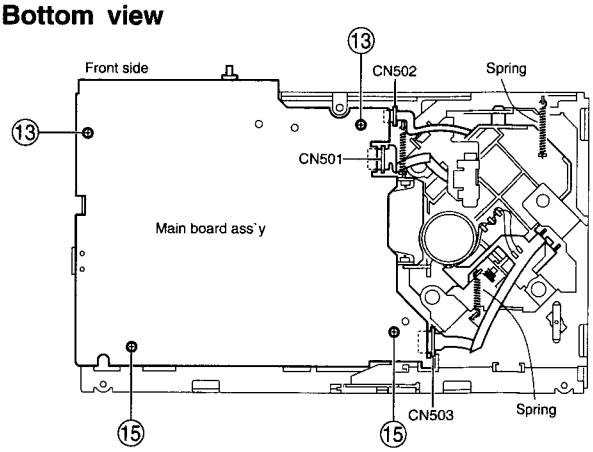


Fig.2-13

■ Note When assembly

◆ Up/down gear position during chassis assembly

Install the up/down gear so that the 2 dent marks on the gear and a hole on the slider are aligned in line as shown in the Fig.2-14.

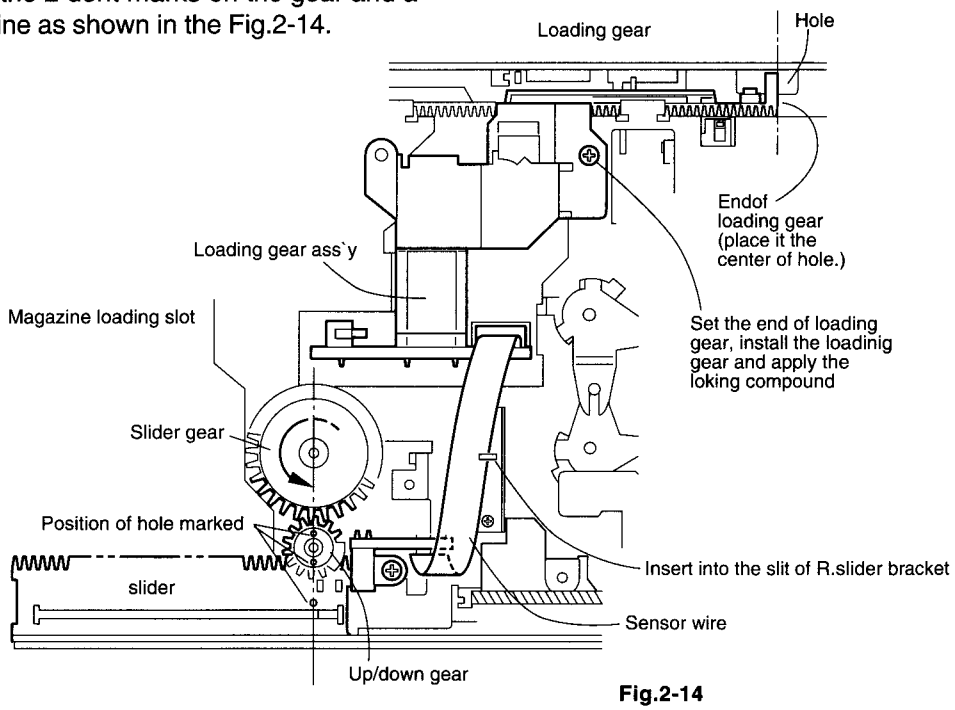

Loading gear
Hole
Endof loading gear (place it the center of hole.)
Loading gear ass`y
Magazine loading slot
Set the end of loading gear, install the loadinig gear and apply the loking compound
Slider gear
Position of hole marked
slider
Insert into the slit of R.slider bracket
Sensor wire
Up/down gear

Fig.2-14

◆Gear position when assembling the magazine plate unit

1. Align the gear positions of magazine plate unit ass'y with each other and install the magagine plate unit in the chassis.
2. When instailling the magagine plate unit ass'y, follow the instructions [1] , [2] and [3] described in the Fig.2-15.

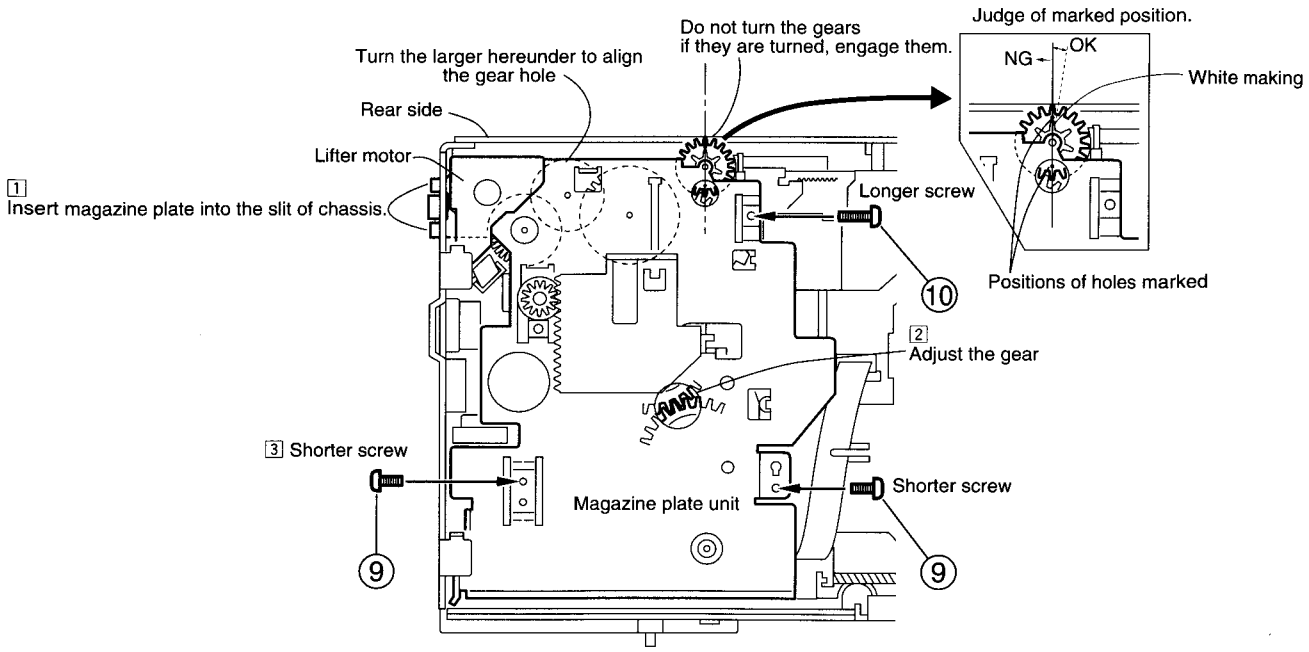


Fig.2-15

◆ CD Mechanism Ass'y

Procedure

1. Check that four suspension springs ㉜ and ㉝ are installed onto the CD mechanism chassis.
2. Check dampers' ㉚ installation and direction.
3. Press the flexible P.C.B. in the specified position.
4. Install section Ⓐ onto the chassis.
5. Set suspension spring Ⓒ in the chassis hole.
6. Assemble the CD mechanism unit while pressing section Ⓑ and set the remaining three suspensions according to the chassis guide.
7. Install the damper to the chassis.

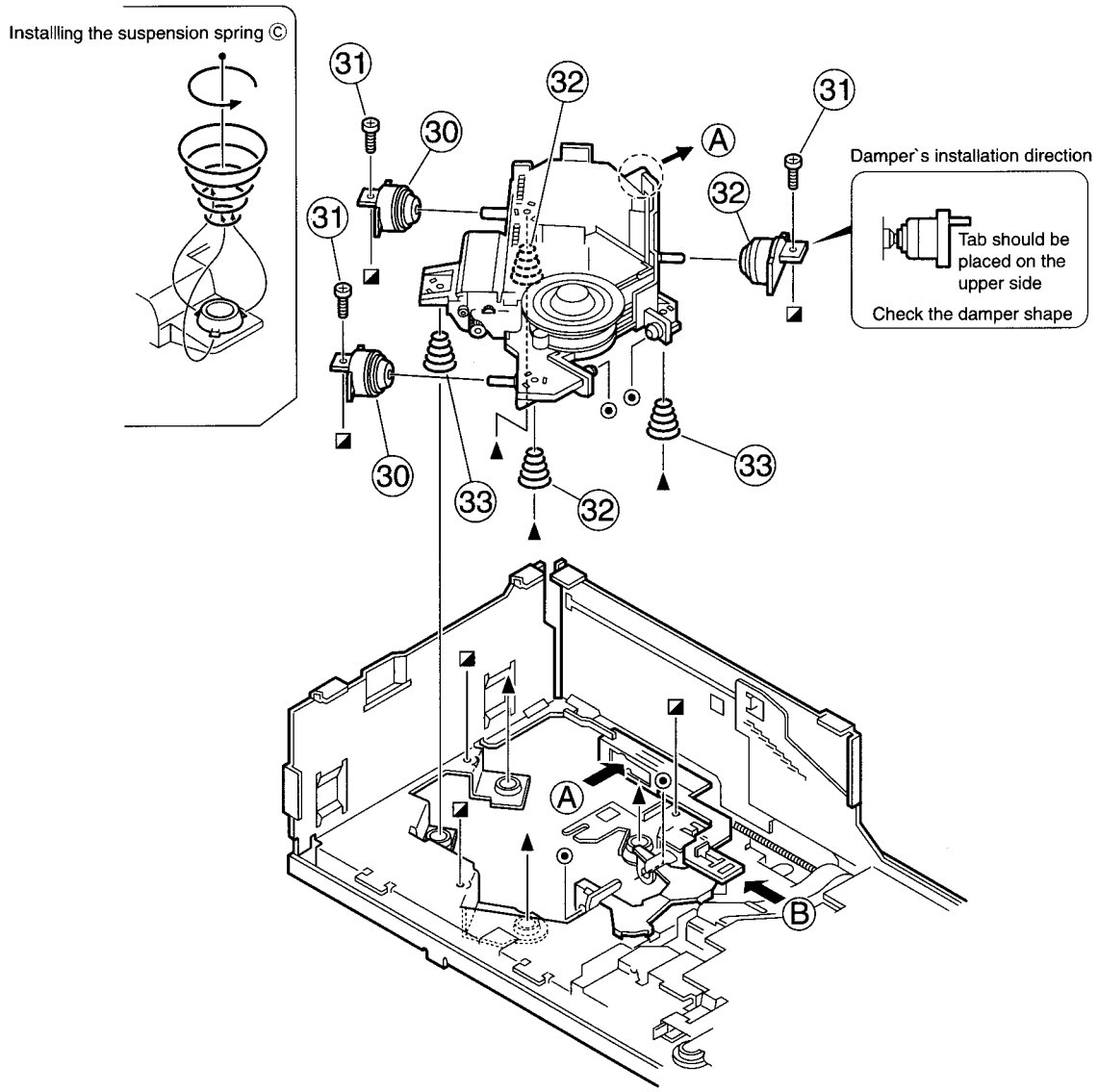


Fig.2-16

◆Installing the Lifter and Rear Panel

1. Check the gear position of magazine plate.
2. Press the lifter into the hook, then install the lifter's front side to the uppermost position.
3. Install the lifter sensor flexible wire onto the motor P.C.B.
4. Set the rear panel slider to the direction of arrow.
5. Use your finger to fix the rear panel ass'y slider.
6. Engage the lifter at the uppermost position of rear panel ass'y.
7. Install the rear panel and check that the end of slider gear and gear mark are aligned.
8. Install the lower rod first (assemble on the rod slider and then install the lifter)and then install the slider bracket.

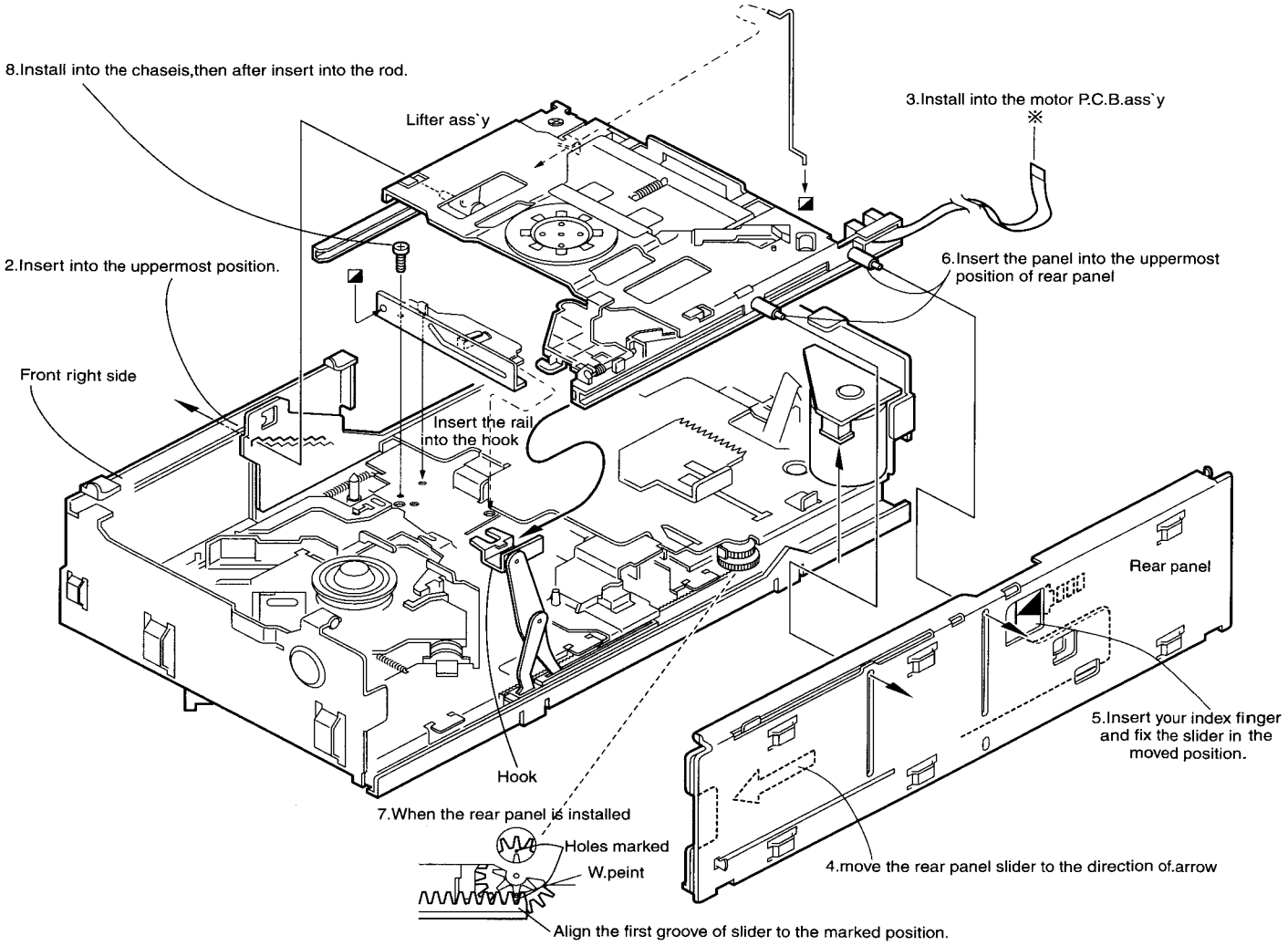

8.Install into the chaseis,then after insert into the rod.
Lifter ass`y
3.Install into the motor P.C.B.ass`y
※
2.Insert into the uppermost position.
6.Insert the panel into the uppermost position of rear panel
Front right side
Insert the rail into the hook
Rear panel
5.Insert your index finger and fix the slider in the moved position.
Hook
7.When the rear panel is installed
Holes marked
W.peint
4.move the rear panel slider to the direction of.arrow
Align the first groove of slider to the marked position.

Fig.2-17

Main adjustment

■ Main ajustment instruments

◆Oscilloscope (Digital oscilloscope (100MHz))
◆Electronic voltage meter
◆ Digital test
◆Tracking offset meter
◆Pulse jitter meter

■ CD measuring disc

◆Standard test disc : JVC CTS-1000
or
: CRG-1242

■ Adjustment position view

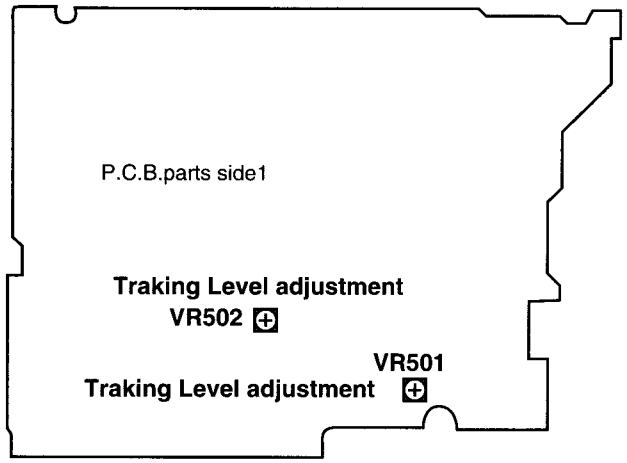


Fig.3-1

■ P.C.B.test point view (pattern side)

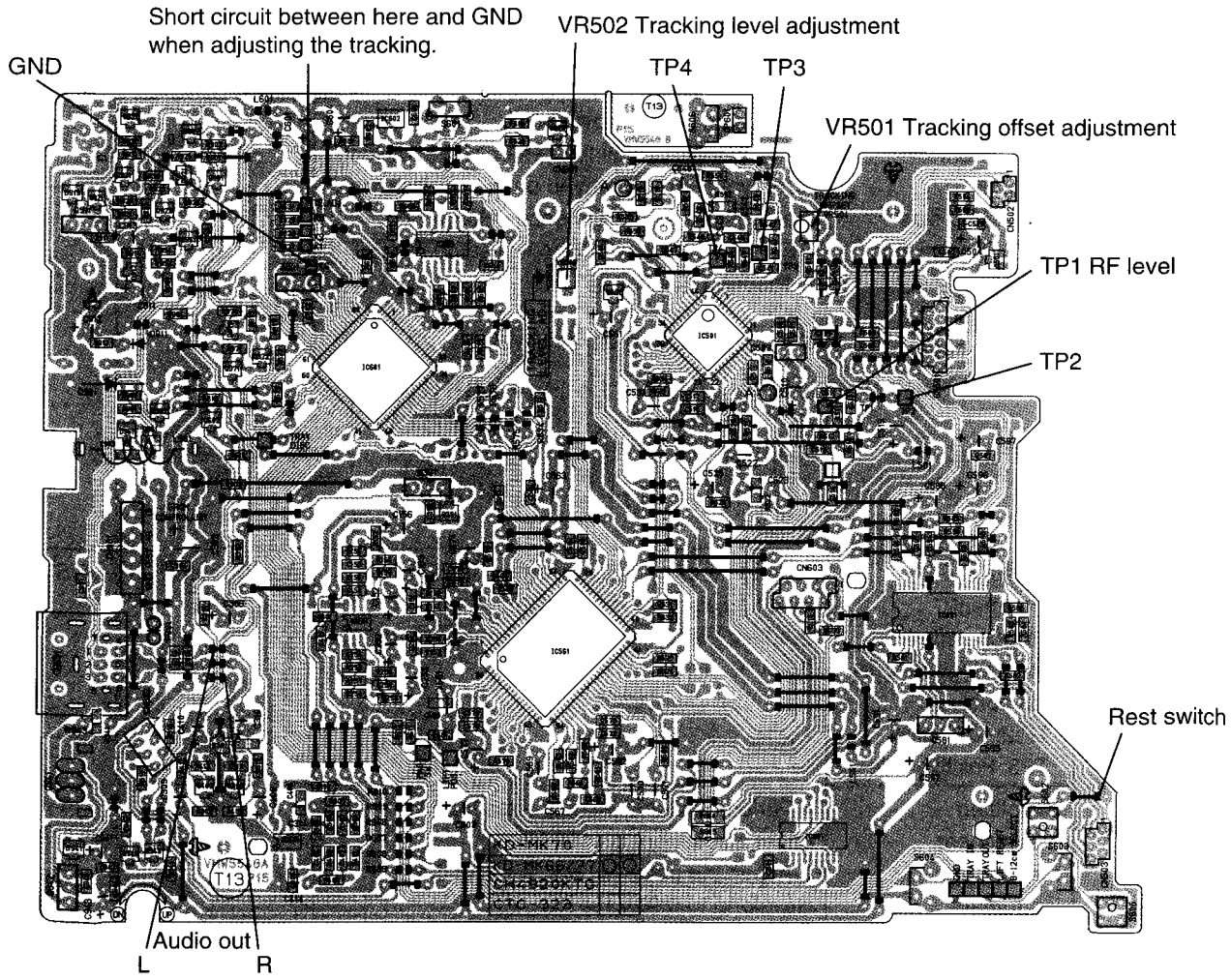
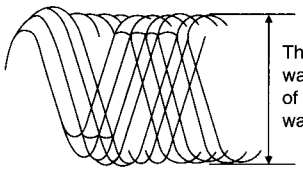
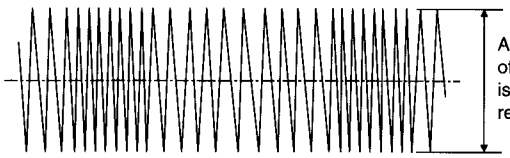
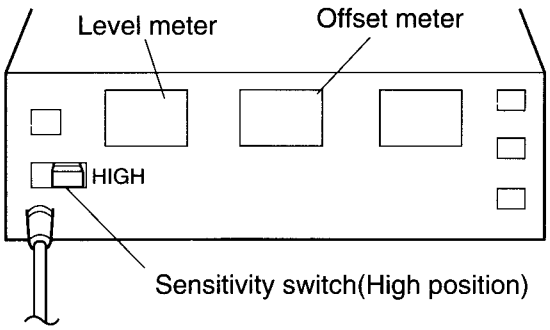


Fig.3-2

Items	Conditions	Adjustment and Confirmation procedure	Standard Value	Adjusting
1.Jitter check	Measuring instrument Oscilloscope Test point TP1: Positive side TP2: GND side	Connect the jitter meter between TP1 and TP2 and when test disc (track 1) is played, confirm that the meter reading is 26n-sec or less.	26n-sec or less	
2.RF level (eye pattern) check	Measuring instrument Oscilloscope	Connect the oscilloscope between TP1 and TP2 and when test disc (track 1) is played, confirm that peak-to-peak value of oscilloscope waveform is within 1.2V +0.3V. Eye-pattern waveform  The maximum value of is waveform should be in the range of specifications and the wavwform should be clear	within 1.2V +0.3V.	
3.Tracking offset adjustment	Measuring instrument Tracking offset meter (high range) Test point TP2: GND side TP3: Positive side	1.Connect pin 79 (TP:TE ADJ) of IC601 (microprocessor) to the GND. 2.Connect the oscilloscope between TP2 and TP3. 3.Play test disc (track 1). 4.Short circuit between TP4 and TP2 during CD play. 5.Adjust VR501 until the offset meter 0.	Offset meter 0	VR501
	Simplified measument Test point TP2: GND side TP3: Positive side Measuring instrument Oscilloscope	1.Same as steps 1 to 4 above. 2.Adjust VR501 until the center of the tracking error waveform displayed on the oscilloscope matches the servo reference voltage (V REF). (The oscilloscpe input is set to the DC measuring position,) Tracking offset waveform  Adjust so that the center of the peak-to-peak value is positioned at te servo referrence voltage(V REF).		
4.Tracking level adjustment	Measuring instrument Tracking offset meter(high rangre) Test point TP:2: GND side TP3: Positive side	1.Perfome this adjustment after Tracking offset adjustment is completed. 2.Adjust VR502 until the level meter reads 0.95V P - P.	Adjust 0.95VP-P	VR502
	Simplified measument Measuring instrument Oscilloscope	1.Perfome this adjustment after Tracking offset adjustment is completed. 2.Adjust the peak-to-peak value of the waveform to 0.95V P - P.		

Items	Conditions	Adjustment and Confirmation	Standard Value	Adjusting
5.Play output level checking	Measuring equipment Electronic voltage meter	When test disc (track 1) is played, check that the output level is 1.45V +0.3V (with 20 - kohm load).	1.45V ± 0.3V	
6.Outermost circumference		Directly access the outer circumference track 31, check that play is performed normally and that abnormalities including sound skipping do not occur.		
7.Operation checking from outer to inner circumference		Skip from the outer circumference track to track 1 and check the time until play starts. Normally it is less than 10 seconds.	Less than 10 seconds	

※Please note that VR502 is located on the sub board or the main board depending on the model. If it is located on the main board, use the dedicated alignment tool.



Troubleshooting chart of CD player section

■ Flowchart Readings ofTOC (Table of Contents)

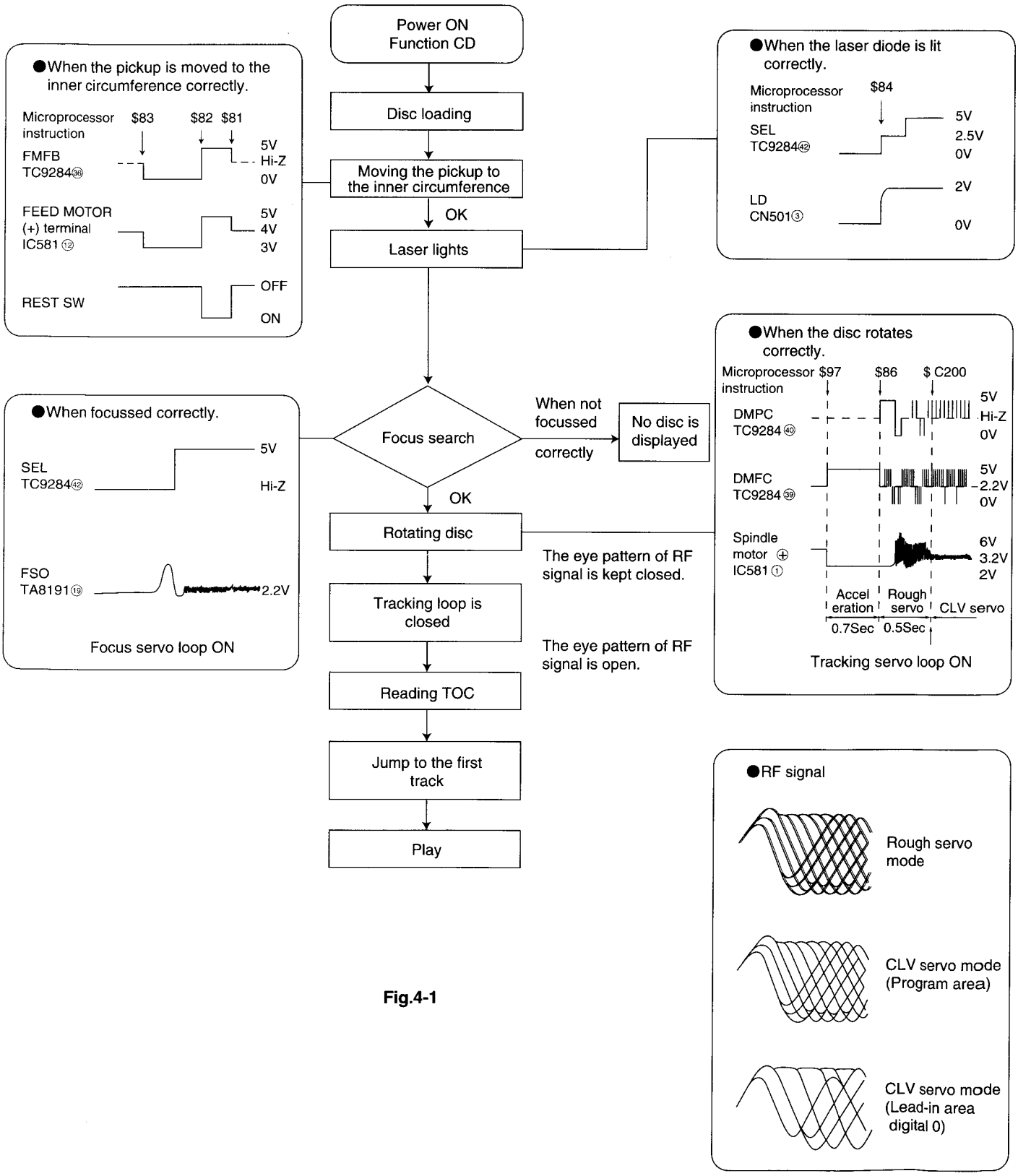


Fig.4-1

■ General Section

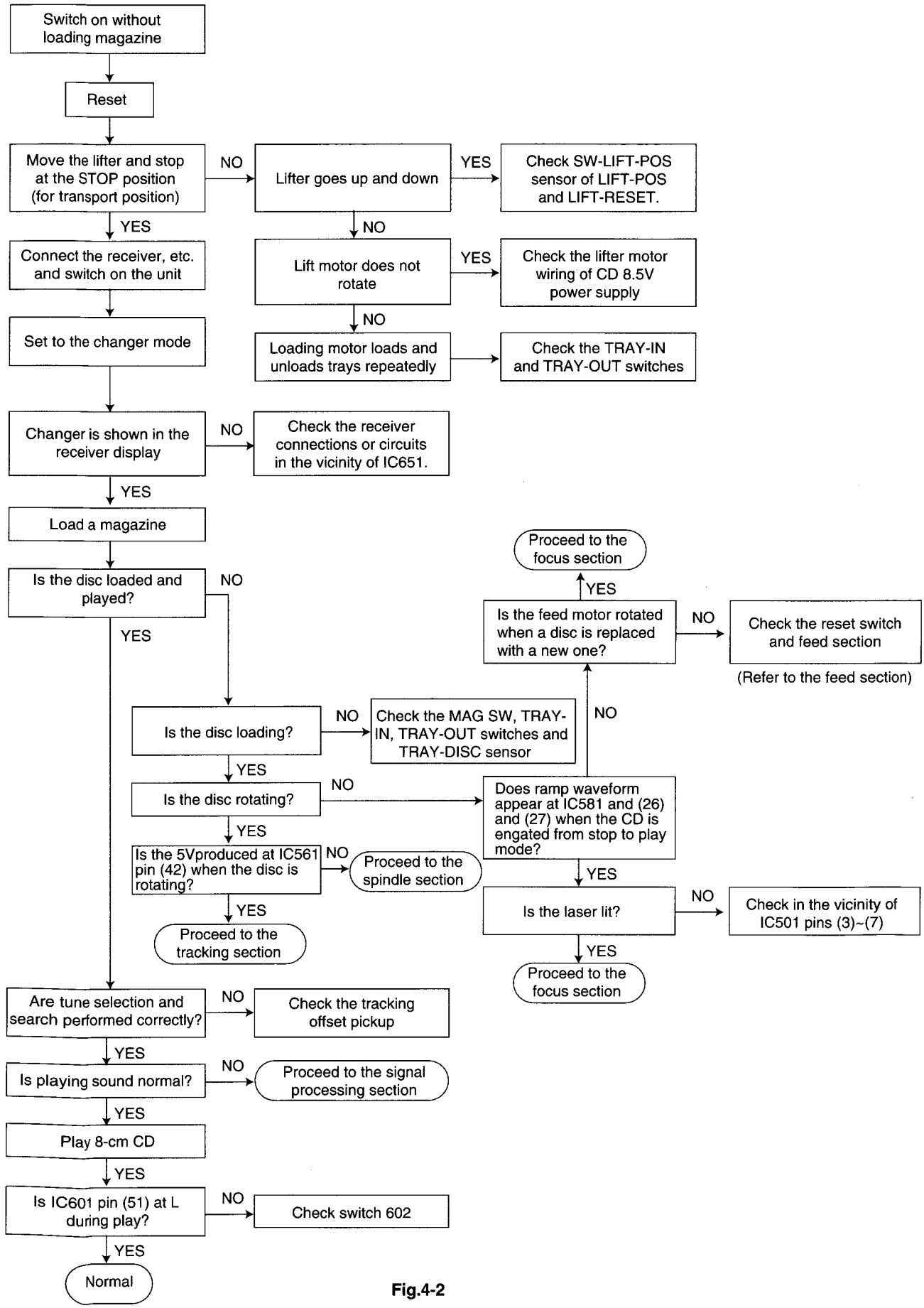

Switch on without loading magazine
Reset
Move the lifter and stop at the STOP position (for transport position)
NO
Lifter goes up and down
YES
Check SW-LIFT-POS sensor of LIFT-POS and LIFT-RESET.
YES
NO
Connect the receiver, etc. and switch on the unit
Lift motor does not rotate
YES
Check the lifter motor wiring of CD 8.5V power supply
NO
Set to the changer mode
Loading motor loads and unloads trays repeatedly
Check the TRAY-IN and TRAY-OUT switches
Changer is shown in the receiver display
NO
Check the receiver connections or circuits in the vicinity of IC651.
YES
Load a magazine
Is the disc loaded and played?
NO
YES
Proceed to the focus section
YES
Is the feed motor rotated when a disc is replaced with a new one?
NO
Check the reset switch and feed section
(Refer to the feed section)
Is the disc loading?
NO
Check the MAG SW, TRAY-IN, TRAY-OUT switches and TRAY-DISC sensor
NO
YES
Is the disc rotating?
NO
Does ramp waveform appear at IC581 and (26) and (27) when the CD is engated from stop to play mode?
YES
Is the 5Vproduced at IC561 pin (42) when the disc is rotating?
NO
Proceed to the spindle section
YES
Is the laser lit?
NO
Check in the vicinity of IC501 pins (3)~(7)
YES
Proceed to the tracking section
YES
Proceed to the focus section
Are tune selection and search performed correctly?
NO
Check the tracking offset pickup
YES
Is playing sound normal?
NO
Proceed to the signal processing section
YES
Play 8-cm CD
YES
Is IC601 pin (51) at L during play?
NO
Check switch 602
YES
Normal

Fig.4-2

Feed Section

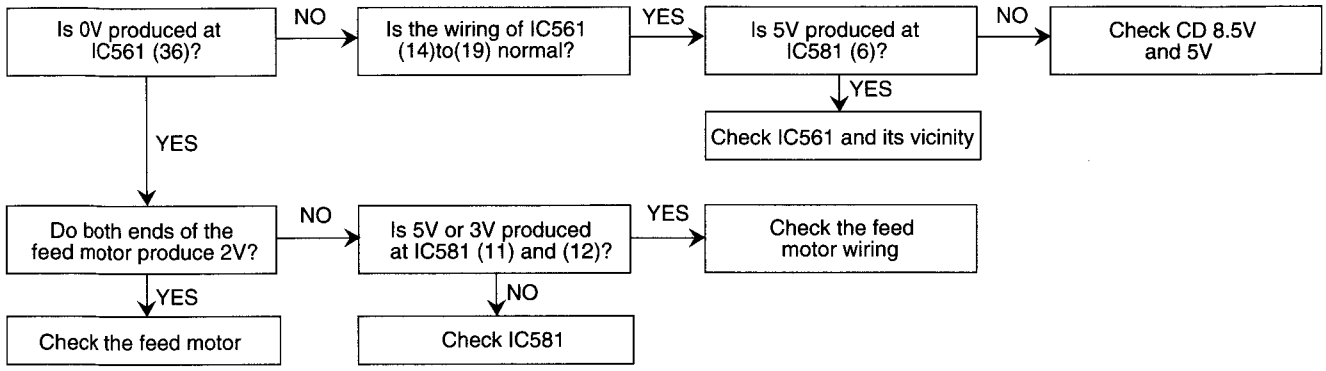


Fig.4-3

Focus Section

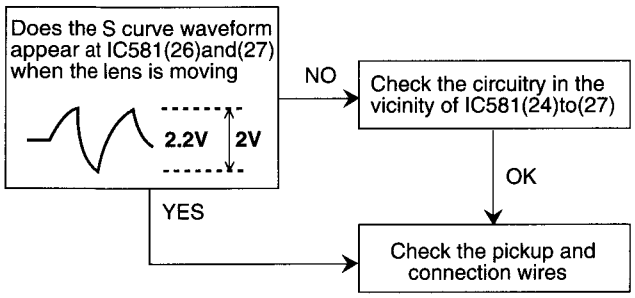

Does the S curve waveform appear at IC581(26)and(27) when the lens is moving
2.2V
2V
NO
Check the circuitry in the vicinity of IC581(24)to(27)
OK
YES
Check the pickup and connection wires

Fig.4-4

Spindle Motor Section

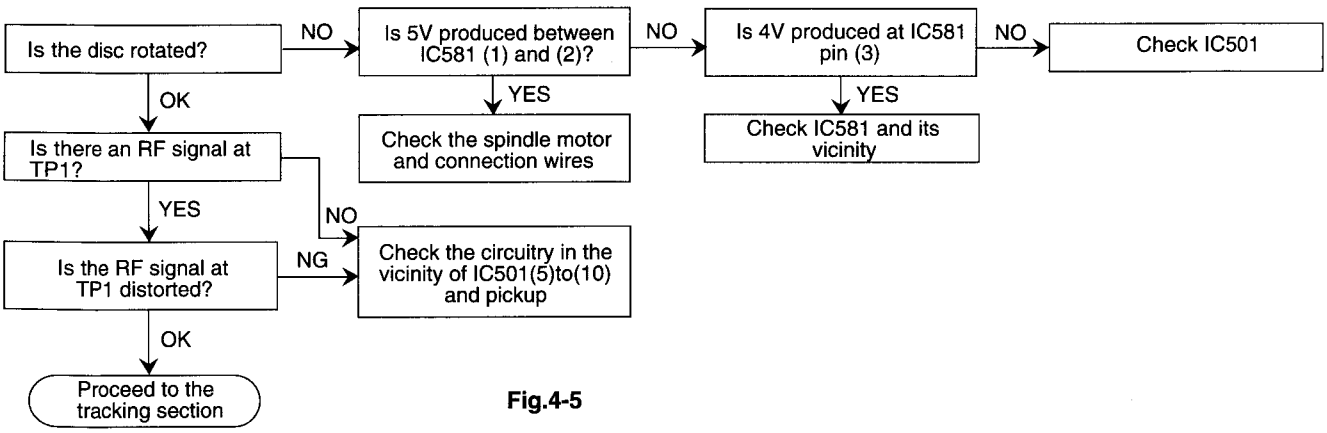


Fig.4-5

Tracking Section

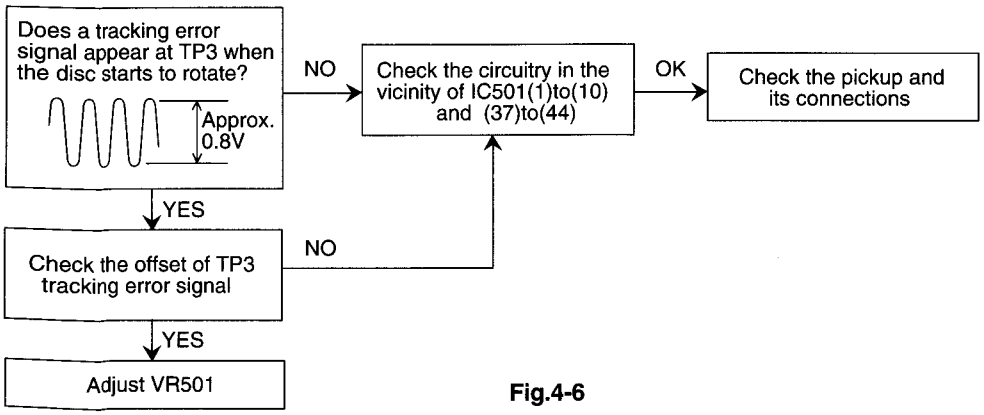

Does a tracking error signal appear at TP3 when the disc starts to rotate?
Approx. 0.8V
NO
Check the circuitry in the vicinity of IC501(1)to(10) and (37)to(44)
OK
Check the pickup and its connections
YES
Check the offset of TP3 tracking error signal
NO
YES
Adjust VR501

Fig.4-6

■ Signal Processing Section

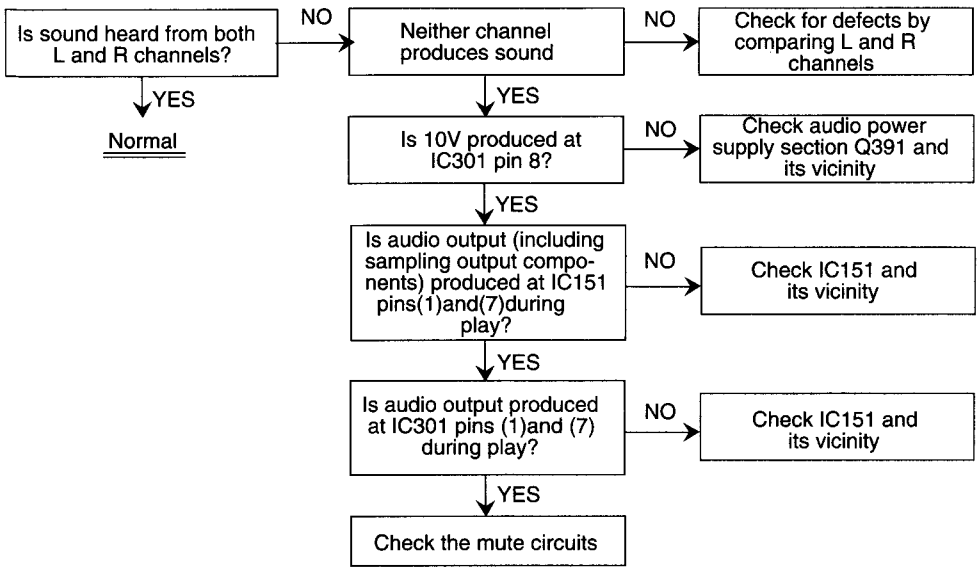

Is sound heard from both L and R channels?
NO
Neither channel produces sound
NO
Check for defects by comparing L and R channels
YES
Normal
YES
Is 10V produced at IC301 pin 8?
NO
Check audio power supply section Q391 and its vicinity
YES
Is audio output (including sampling output components) produced at IC151 pins(1)and(7)during play?
NO
Check IC151 and its vicinity
YES
Is audio output produced at IC301 pins (1)and (7) during play?
NO
Check IC151 and its vicinity
YES
Check the mute circuits

Fig.4-7

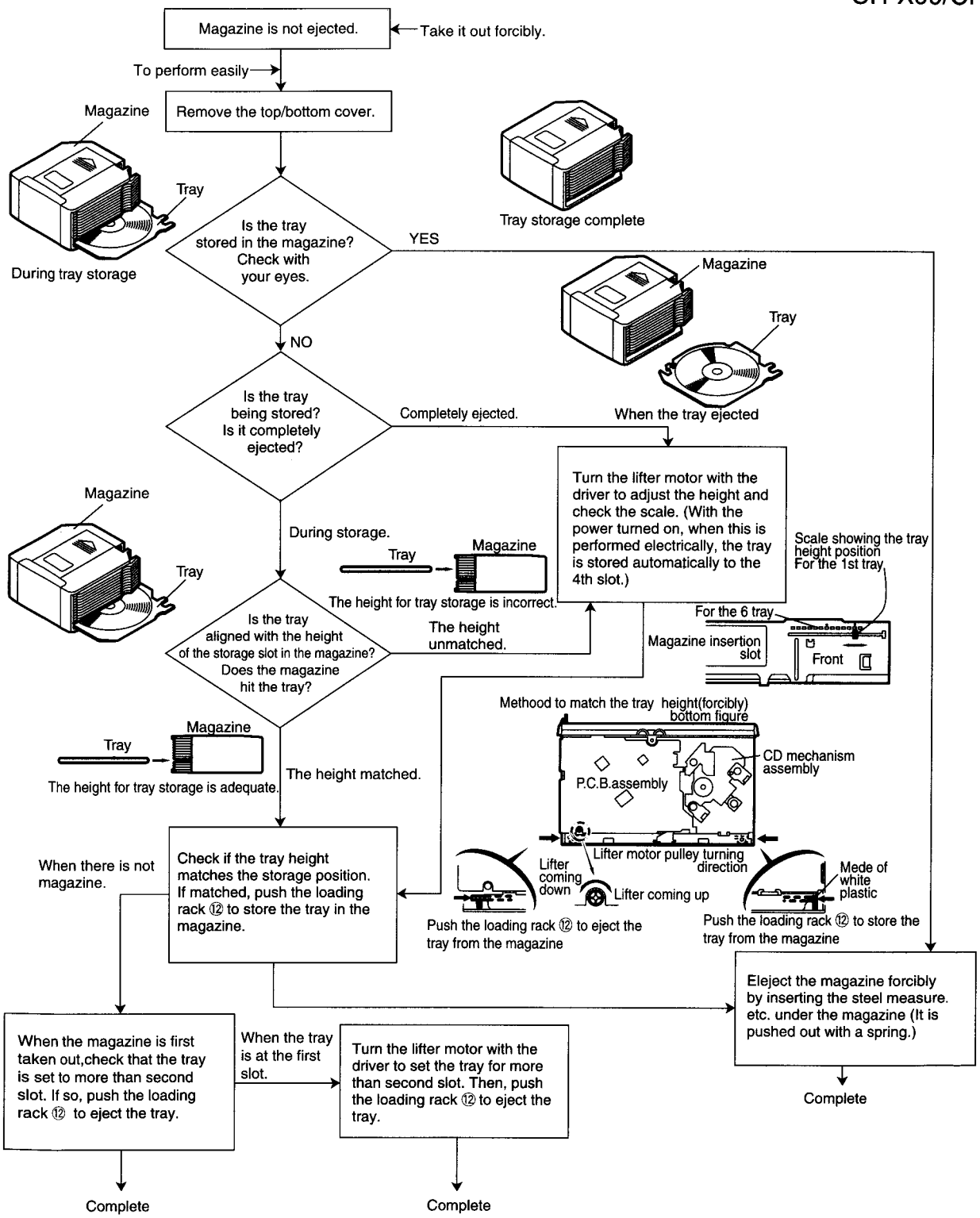
CH-X99 repair method for error indication

Error indication	Repair method
◆ E1: Eject error	The magazine cannot be ejected until S701 (magazine SW) is turned off. Can the magazine be ejected? OK → ① , NG → ② ① Even when the magazine is ejected completely, magazine SW S701 is not turned off. ② Check if the magazine is caught by the mechanism.
◆ E2: Lifter motor error	The lifter does not go up or down when changing a disc or ejecting the magazine. Does the lifter move after resetting? OK → ③ , NG → ④ ③ When the lifter passes though the specified disc position, check the lift position input (IC601 pin 44 to Q701). When the lifter does not reach the specified disc position, check the mechanism (mainly the lifting mechanism). ④ Check if the drive voltage is applied to the motor terminal. If the voltage is ap plied, check the lifting mechanism. If not, separate the motor from the circuit and check again if the voltage is applied. When the voltage is applied, check that the lift motor's armature resistance (resistance across the motor terminals) is about 12 ohms. If it is extremely low (1 to 2 ohms), the motor is defective.
◆ E3: Tray motor error	Does the error occur when the disc is taken out from the magazine or when the disc is returned to the magazine? If it occurs when the disc is taken out, check if the MAG SW and TRAY OUT SW are set to ON. If it occurs when the disc is returned, check as follow. Does the mechanism operate to return? OK → ⑤ , NG → ⑥ , ⑦ ⑤ DIs as signal input to the TRAY IN input pin (IC601 pin 54)? (L when the tray is re turned.) If no signal is input, check the pattern and MAG SW. If the tray stops in the middle, check the magazine. ⑥ When the lifter stops at the desired disc position, is the voltage applied to the tray motor terminal? When the voltage is applied, check the tray return mecha nism, If not, check tray motor's armature resistance (about 20 ohms) the motor driver, and computer- controlled line. ⑦ When the lifter does not reach the desired disc position, check the TRAY and DISC sensors.
◆ E4: Pickup return error	When ejecting, does the feed (pick up unit) return to the inner periphery? OK → ⑧ , NG → ⑨ ,⑩ ⑧ Check the REST SW. ⑨ If the feed gear turns, check the feed mechanism. ⑩ If the feed gear does not turn, check the motor driver and pattern.

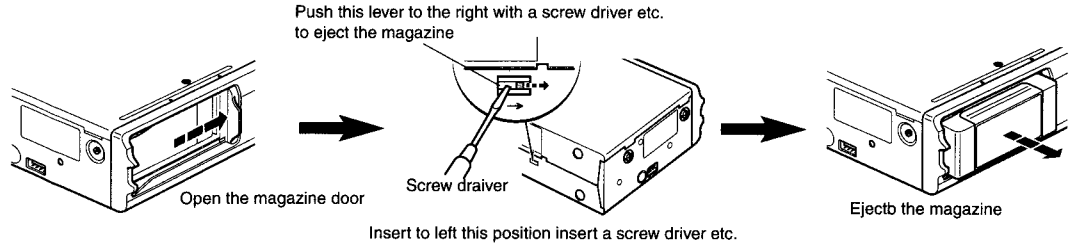
Error that may occur in the receiver or the controller

◆ E8: Connection error	If the CD changer mode does not become effective or the E8 error appears when the CD changer mode is selected using a function key, it indicates a communica tion error. (a) Check the cable connecting the CD changer with the receiver (CD changer controller). (b) Check the CD changer power cord and fuses (including F901 on the board). (c) Check IC651 and its peripheral circuits.

※ E-1 to E-8, 1E1 to 1E8, R-1 to R-8, or RST1 to RST8 may be displayed on some models instead of the above E1 to E8 error codes.


Magazine is not ejected.
Take it out forcibly.
To perform easily
Remove the top/bottom cover.
Magazine
Tray
During tray storage
Tray storage complete
Is the tray stored in the magazine? Check with your eyes.
YES
NO
Magazine
Tray
When the tray ejected
Is the tray being stored? Is it completely ejected?
Completely ejected.
Turn the lifter motor with the driver to adjust the height and check the scale. (With the power turned on, when this is performed electrically, the tray is stored automatically to the 4th slot.)
Scale showing the tray height position For the 1st tray
For the 6 tray
Magazine insertion slot
Front
Magazine
Tray
During storage.
Tray
Magazine
The height for tray storage is incorrect.
The height unmatched.
Is the tray aligned with the height of the storage slot in the magazine? Does the magazine hit the tray?
Methood to match the tray height(forcibly)
bottom figure
CD mechanism assembly
P.C.B.assembly
Lifter motor pulley turning direction
Lifter coming down
Lifter coming up
Mede of white plastic
Push the loading rack ⑫ to eject the tray from the magazine
Push the loading rack ⑫ to store the tray from the magazine
Magazine
Tray
The height for tray storage is adequate.
The height matched.
When there is not magazine.
Check if the tray height matches the storage position. If matched, push the loading rack ⑫ to store the tray in the magazine.
Eleject the magazine forcibly by inserting the steel measure. etc. under the magazine (It is pushed out with a spring.)
Complete
When the magazine is first taken out,check that the tray is set to more than second slot. If so, push the loading rack ⑫ to eject the tray.
When the tray is at the first slot.
Turn the lifter motor with the driver to set the tray for more than second slot. Then, push the loading rack ⑫ to eject the tray.
Complete
Complete

■ Method to eject the magazine forcibly


Push this lever to the right with a screw driver etc. to eject the magazine
Open the magazine door
Screw draiver
Ejectb the magazine
Insert to left this position insert a screw driver etc.

Note

1.After the magazine has been ejected, if a CD and tray still remain in the set mechanism, make sure that they are completely removed.

2.During the moment the tray is being ejected from the magazine, the magazine cannot be ejected in the manner as illustrated .To eject the magazine, you must either push the tray back into the magazine once tray to eject the magazine again after the tray has been completely ejected from the magazine.

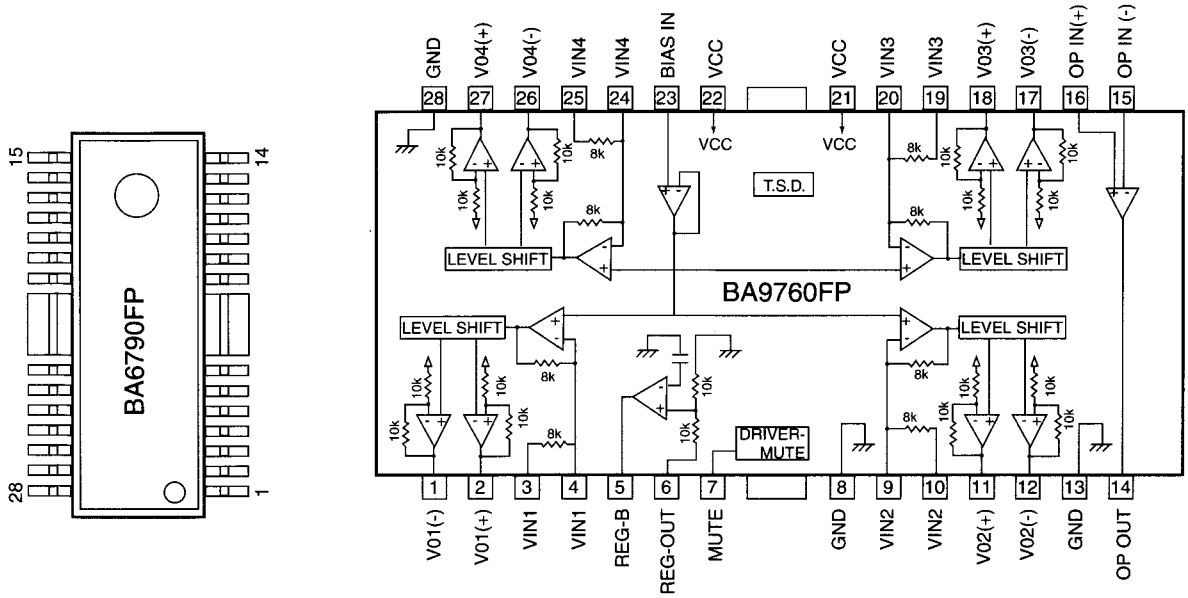
Main IC Block Diagram

■IC601 UPD78052GC Microprocessor

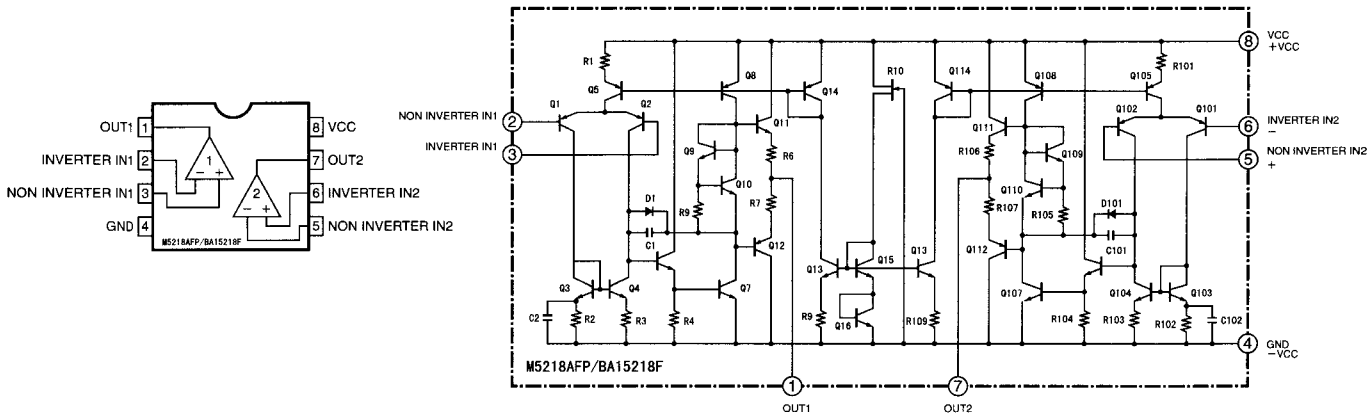
Pin No.	Port names	I/O	Pin name	Descriptions	Connection to	Active
1	P15/ANI5	I		(Connect to GND)		
2	P16/ANI6	I		(Connect to GND)		
3	P17/ANI7	I		(Connect to GND)		
4	AVSS	-	GND	GND		
5	P130/AN00	I		(Connect to GND)		
6	P131/AN01	I		(Connect to GND)		
7	AVREF1	-	VCC	5V power supply		
8	P70/S12/RXD	I		(Connect to GND)		
9	P71/SO2/TXD	I		(Connect to GND)		
10	P72/SCK2/ASCK	I		(Connect to GND)		
11	P20/SI1	I		(Connect to GND)		
12	P21/SO1	I		(Connect to GND)		
13	P22/SCK1	I		(Connect to GND)		
14	P23/STB	I		(Connect to GND)		
15	P24/BUSY	O	JB_I/O	JVC BUS in/output control (L:input)	74HC126	
16	P25/SI0/SB0	I	JB_SI	JVC BUS date input	74HC126	
17	P26/SO0/SB1	O	JB_SO	JVC BUS date output	74HC126	
18	P27/SCK0	I/O	JB_SCK	JVC BUS clock in/output	74HC126	
19	P40/AD0	I		(Connect to GND)		
20	P41/AD1	I		(Connect to GND)		
21	P42/AD2	I		(Connect to GND)		
22	P43/AD3	I		(Connect to GND)		
23	P44/AD4	I		(Connect to GND)		
24	P45/AD5	I		(Connect to GND)		
25	P46/AD6	I		(Connect to GND)		
26	P47/AD7	I	SHOCK.DET	(Connect to GND)(AUTO=H,MANU=L)		
27	P50/A8	I	EJ_MODE	Eject mode (L:EJECT.Without switch)		
28	P51/A9	I	TEMP_DET	Temperature detection pin (L:High temperature)		
29	52/A10	O	PWE_CONT	Power control		H
30	P53/A11	O	EJ_LED	Eject power display		H
31	P54/A12	I		(Connect to GND)		
32	P55/A13	I		(Connect to GND)		
33	VSS	-	GND	GND		
34	P56/A14	O	BUCK	CD LSI date clock	TC9284	
35	P57/A15	O	CCE	CD LSI chip enable	TC9284	
36	P60	I/O	BUS3	CD LSI date 3 (Open drain output)	TC9284	
37	P61	I/O	BUS2	CD LSI date 2 (Open drain output)	TC9284	
38	P62	I/O	BUS1	CD LSI date 1 (Open drain output)	TC9284	
39	P63	I/O	BUS0	CD LSI data 0 (Open drain output)	TC9284	
40	P64/rd	O		(Open)		
41	P65/WR	O		(Open)		
42	P65/WAIT	O	LSI_RESET	CD LSI reset	TC9284	L

Pin No.	Port names	I/O	Pin name	Descriptions	Connection to	Active
43	P67/ASTB	O		(Open)		
44	P30/TO0	I	LIFT_POS	Lifter height detection sensor	Mechanism	
45	P31/TO1	I	MAG_SW	Magazine switch (L:when loading)	Mechanism	
46	P32/TO2	O	TRAY_M_1	Tray motor control	LB1831	
47	P33/TI1	O	TRAY_M_2	Tray motor control	LB1831	
48	P34/TI2	O	LIFT_M_2	Lift motor control	LB1831	
49	P36/PCL	O	LIFT_M_1	Lift motor control	LB1831	
50	P36/BUZ	I	REST_SW	Rest switch (L:Home position)	Mechanism	L
51	P37	I	8/12_SW	8-cm CD detection switch (L:8cm)	Mechanism	
52	P120/RTP0	I	LIFT_RES	Lifter reset switch	Mechanism	H
53	P121/RTP1	I	TRAY_OUT	Tray eject switch (L:Ejection)	Mechanism	L
54	P122/RTP2	I	TRAY_IN	Tray insertion switch (L:Insertion completion)	Mechanism	L
55	P123/RTP3	I	TRAY_DISC	Tray disc detection sensor	Mechanism	
56	P124/RTP4	O	_NATIVE	Native mode display(H:Native mode)		H
57	P125/RTP5	O	A_MUTE	Audio mute signal		L
58	P126/RTP6	O	MUTE_PWR	Power control mute		H
59	P127/RTP7	O	CD_ON	CD power control (H:ON)		H
60	RESET	I	RESET	Reset input		L
61	P00/INTP0/T00	I	TEST_RUN	Test running pin (for line test)		L
62	P01/INTP1/T01	O	JB_BUSout	BUS output for JVC BUS		H
63	P02/INTP2	I	PWR_SW	CONT+B detection input		H
64	P03/INTP3	I	PWR_DET	Power voltage detection input		H
65	P04/INTP4	I	EJECT_SW	Eject switch (When EJ mode is I,it can be also used as aDOOR SW)		L
66	P05/INTP5	I	DOOR_SW	Door switch		L
67	P06/INTP6	I	JB_INT	Interruption of JVC BUS communication	74HC126	H
68	VDD	-	VCC	5V power supply		
69	X2	O	X2	Oscillator (4,000MHz)		
70	X1	I	X	Oscillator (4,000MHz)		
71	IC(VPP)	-	GND	GND		
72	XT2	O	XT2	(Open) *Set the subclok feedback resistor to off.		
73	XT1/P07	I	XT1	(Connect GND)		
74	AVDD	-	VCC	5V power supply		
75	AVREF0	-	ON_B	5V power supply when power is switched on.		
76	P10/ANI0	I	KEY1	Key input 1 (A/D input)(for line test)		
77	P11/ANI1	I	KEY2	Key input 2 (A/D input)(for line test)		
78	P12/ANI2	I	KEY3	Key input 3 (A/D input)(for line test)		
79	P13/ANI3	I	TE_ADJ	For tracking adjustment.(L:Q time off)		
80	P14/ANI4	I		(Connect GND)		

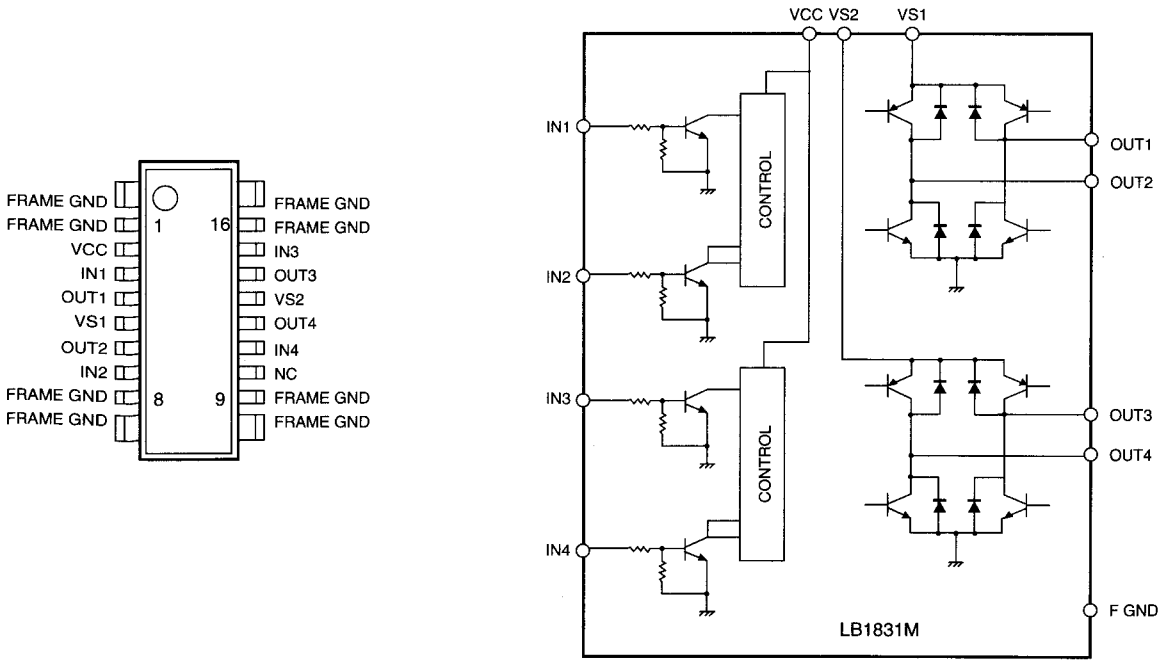
◆IC581 (BA6790FP) Servo Drive



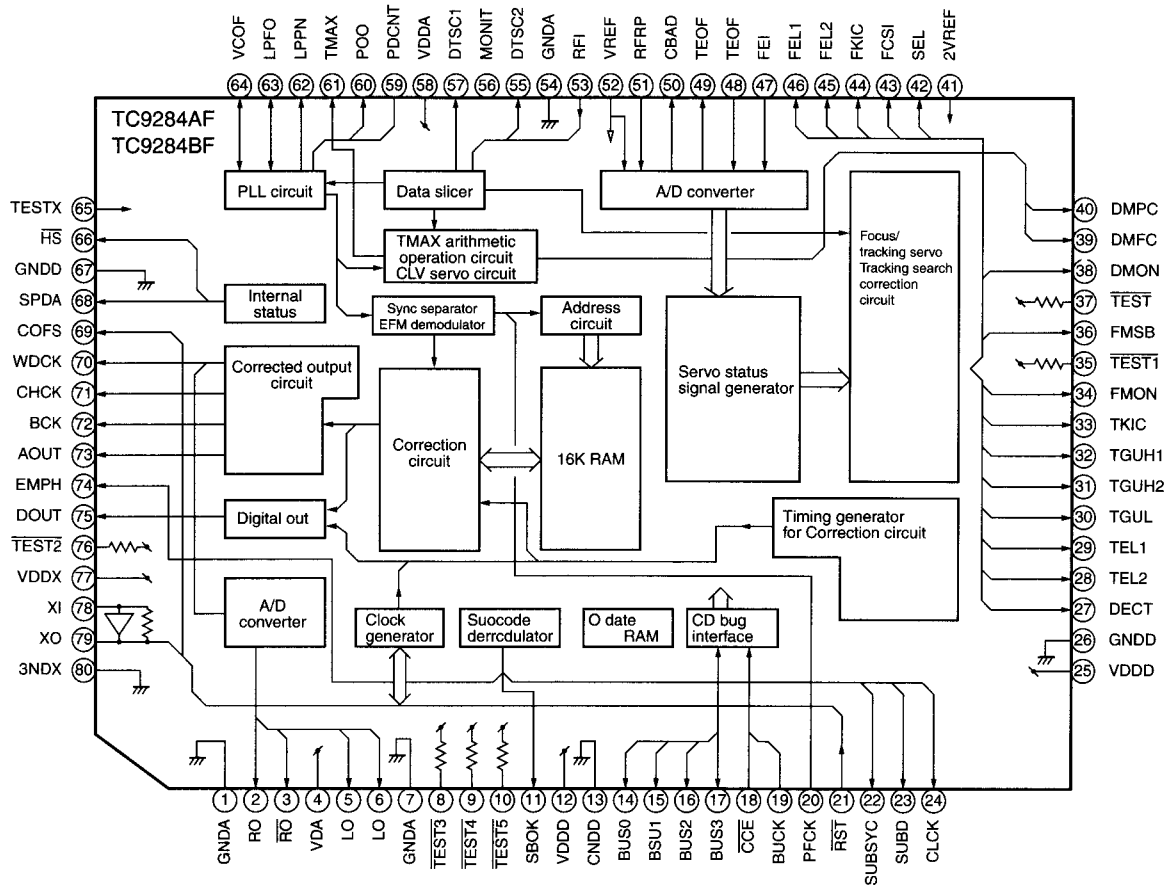
◆IC151/IC301(BA15218F)Differencial amp,Bufferamp.



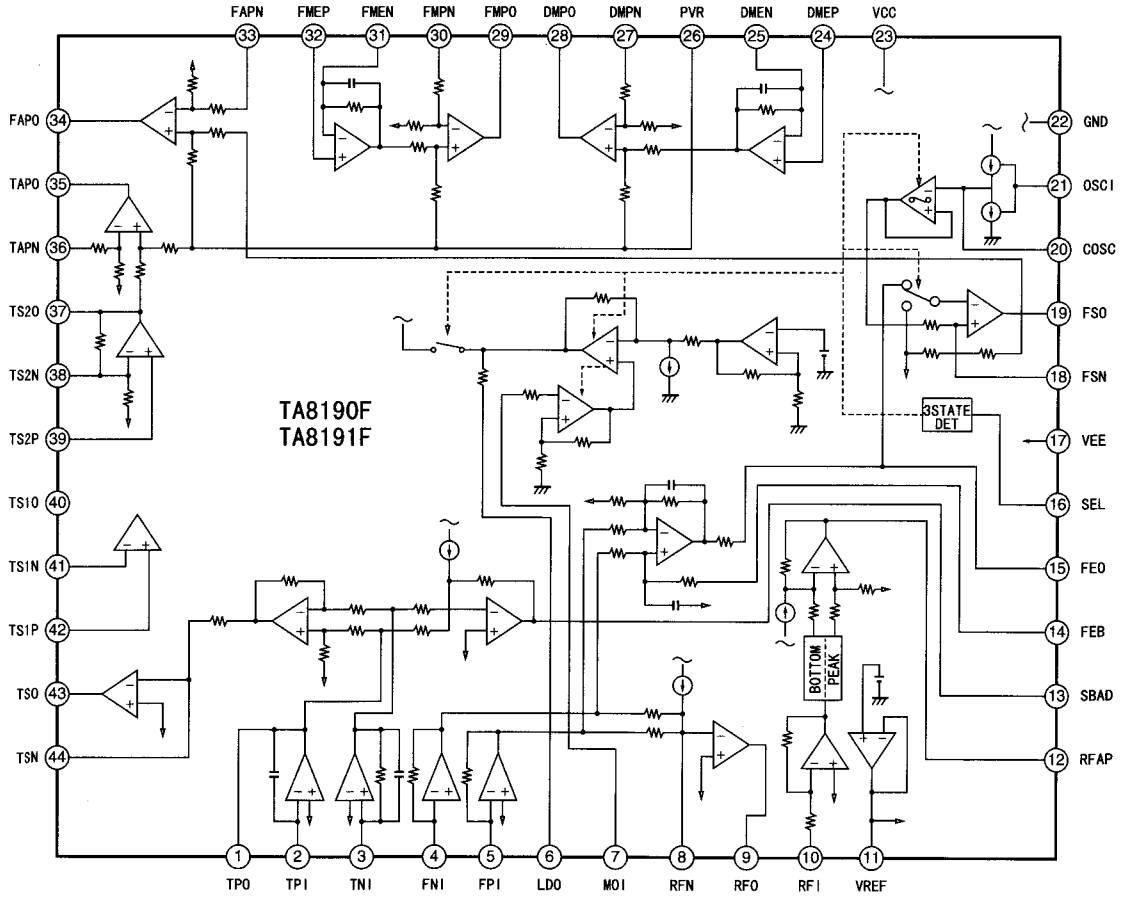
◆IC801 (Lb1831M) Motor drive



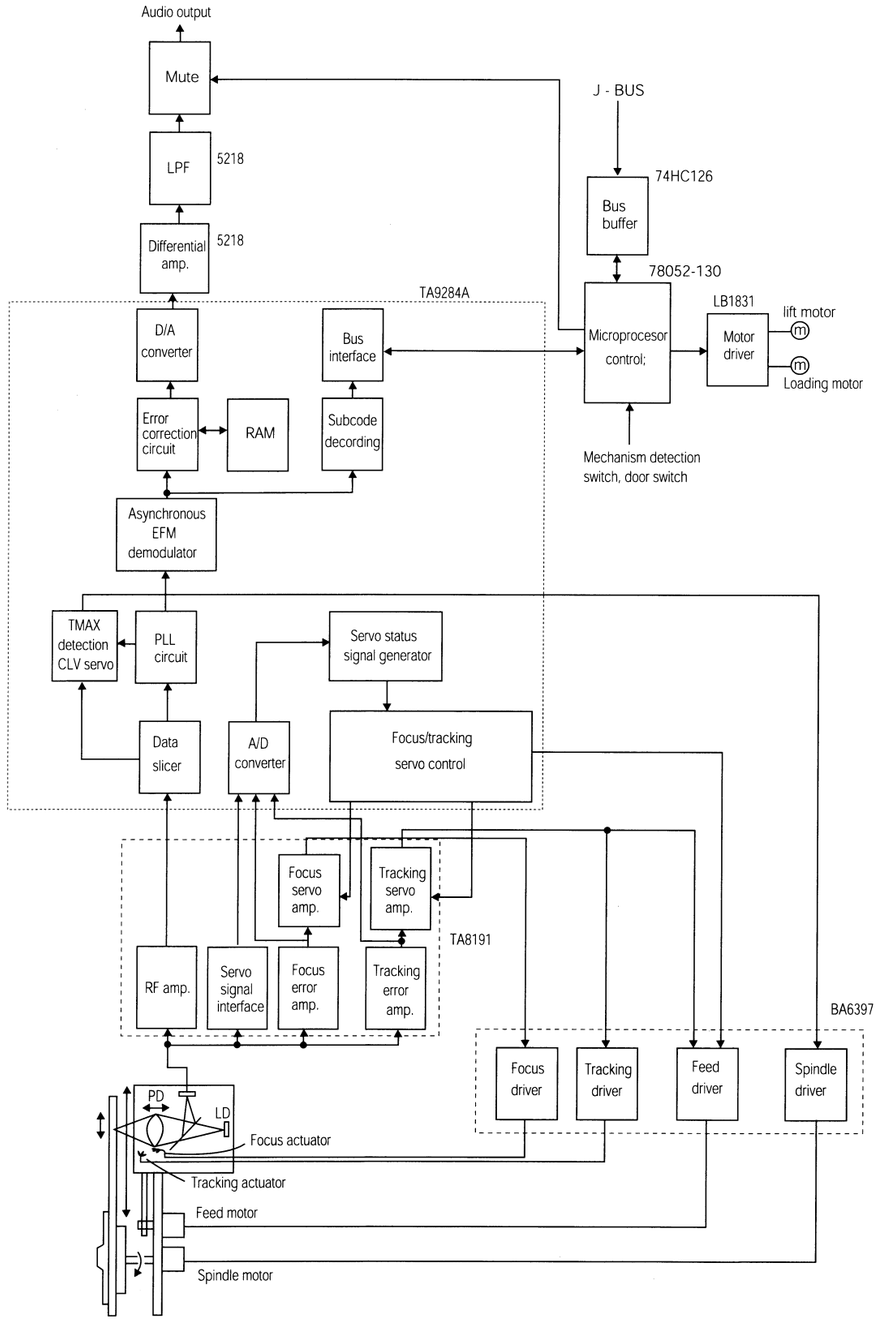
◆IC561(TC9284BF)Data processor


TC9284AF
TC9284BF
PLL circuit
Data slicer
A/D converter
TMAX arithmetic operation circuit CLV servo circuit
Internal status
Sync separator EFM demodulator
Address circuit
Corrected output circuit
Correction circuit
16K RAM
Servo status signal generator
Focus/ tracking servo Tracking search correction circuit
Digital out
Timing generator for Correction circuit
A/D converter
Clock generator
Suocode derrcdulator
O date RAM
CD bug interface
VCOF LPFO LPPN TMAX POO PDCNT VDDA DTSC1 MONIT DTSC2 GNDA RFI VREF RFRP CBAD TEOF TEOF FEI FEL1 FEL2 FKIC FCSI SEL 2VREF
TESTX HS GNDD SPDA COFS WDCK CHCK BCK AOUT EMPH DOUT TEST2 VDDX XI XO 3NDX
DMPC DMFC DMON TEST TEST1 FMSB FMON TKIC TGUH1 TGUH2 TGUL TEL1 TEL2 DECT GNDD VDDD
GNDA RO RO VDA LO LO GNDA TEST3 TEST4 TEST5 SBOK VDDD CNDD BUS0 BUS1 BUS2 BUS3 CCE BUCK PFCK RST SUBSYC SUBD CLCK

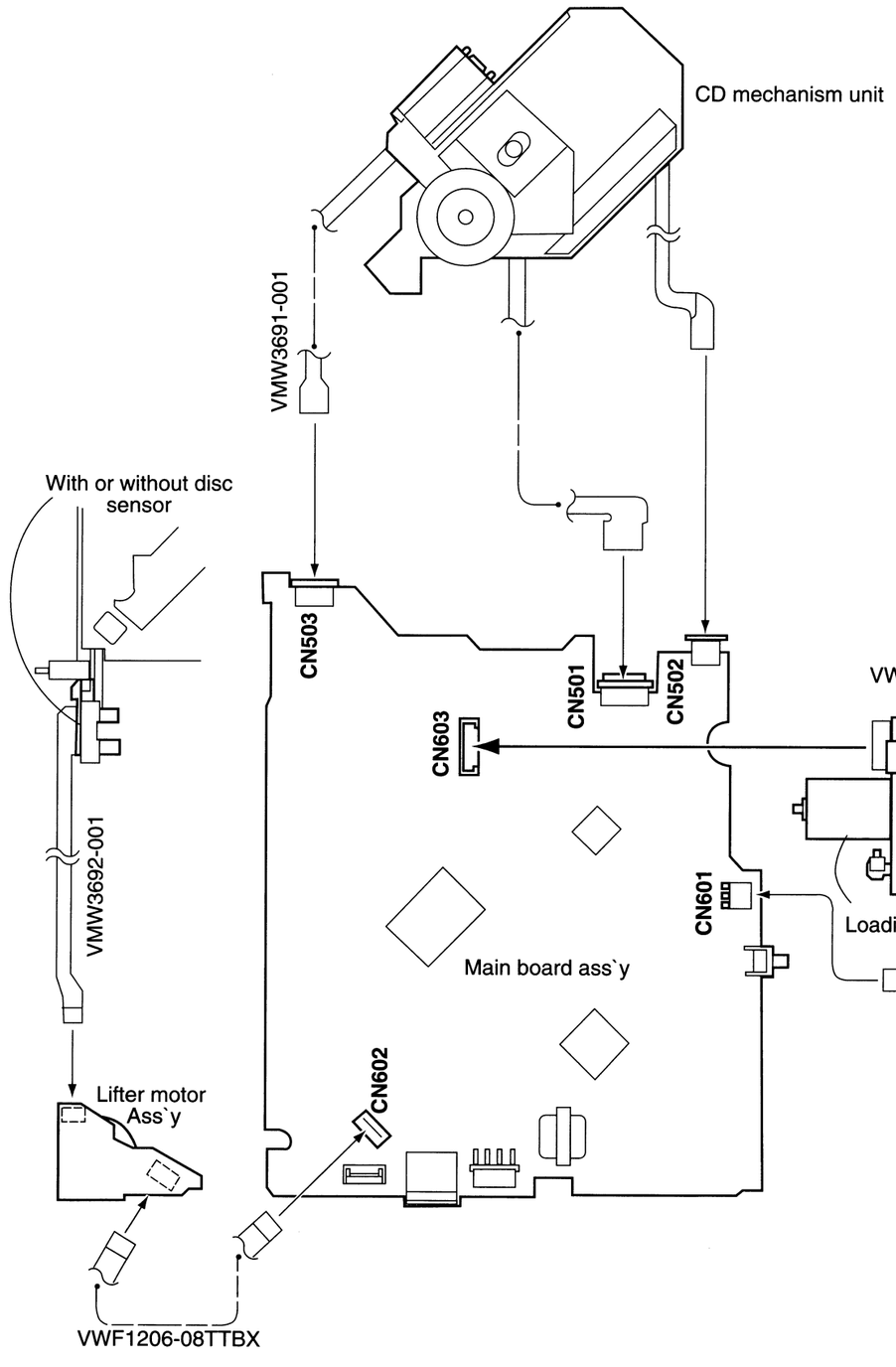
◆IC561(TC9284BF)Data processor


TA8190F
TA8191F
3STATE DET
BOTTOM PEAK
FAPN FMEP FMEN FMPN FMPO DMPO DMPN PVR DMEN DMEP VCC
FAPO TAPO TAPN TS2O TS2N TS2P TS1O TS1N TS1P TSO TSN
GND OSCI COSC FSO FSN VEE SEL FEO FEB SBAD RFAP
TPO TPI TNI FNI FPI LDO MOI RFN RFO RFI VREF

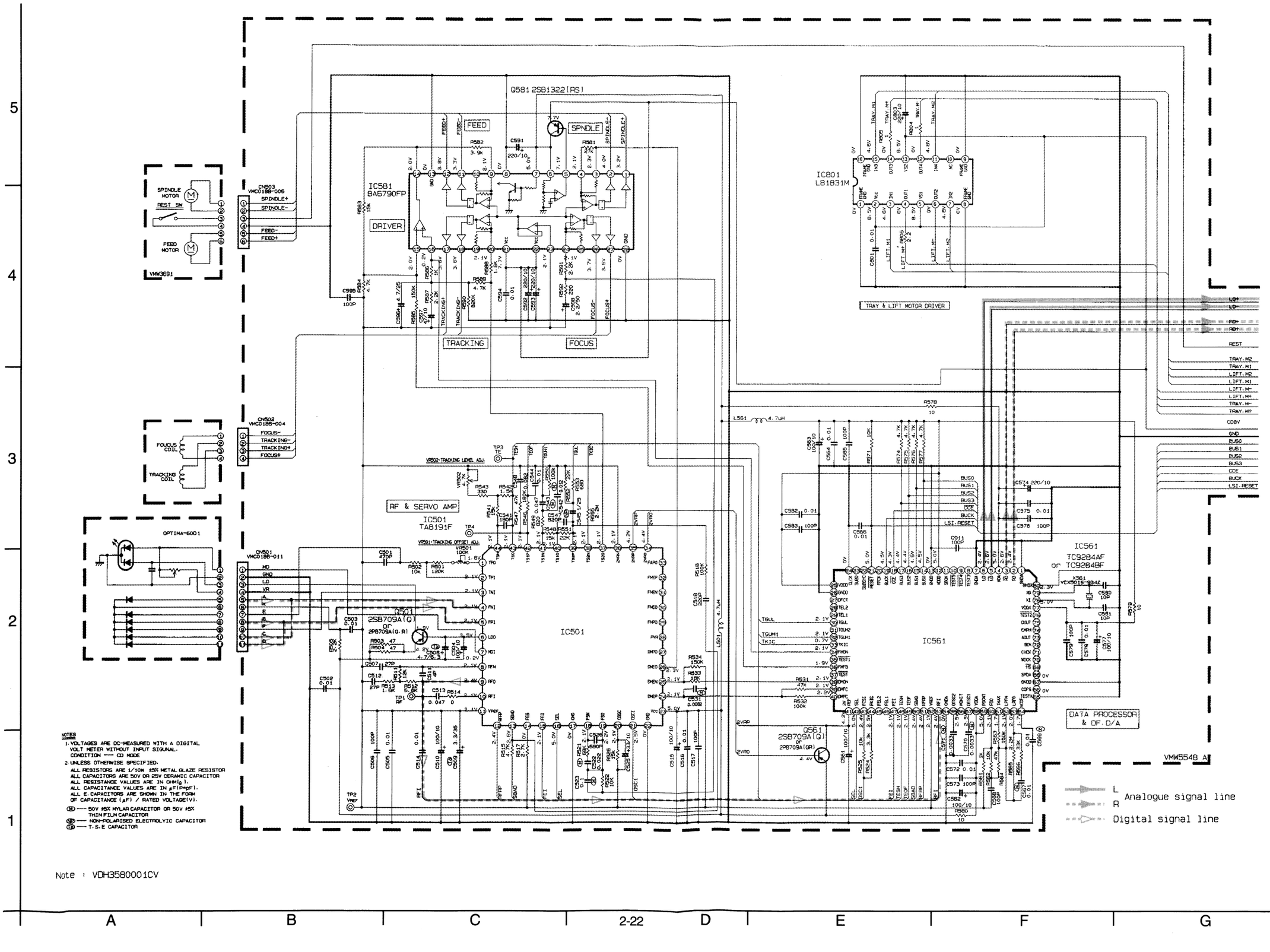
Brock diagram



Wiring connections

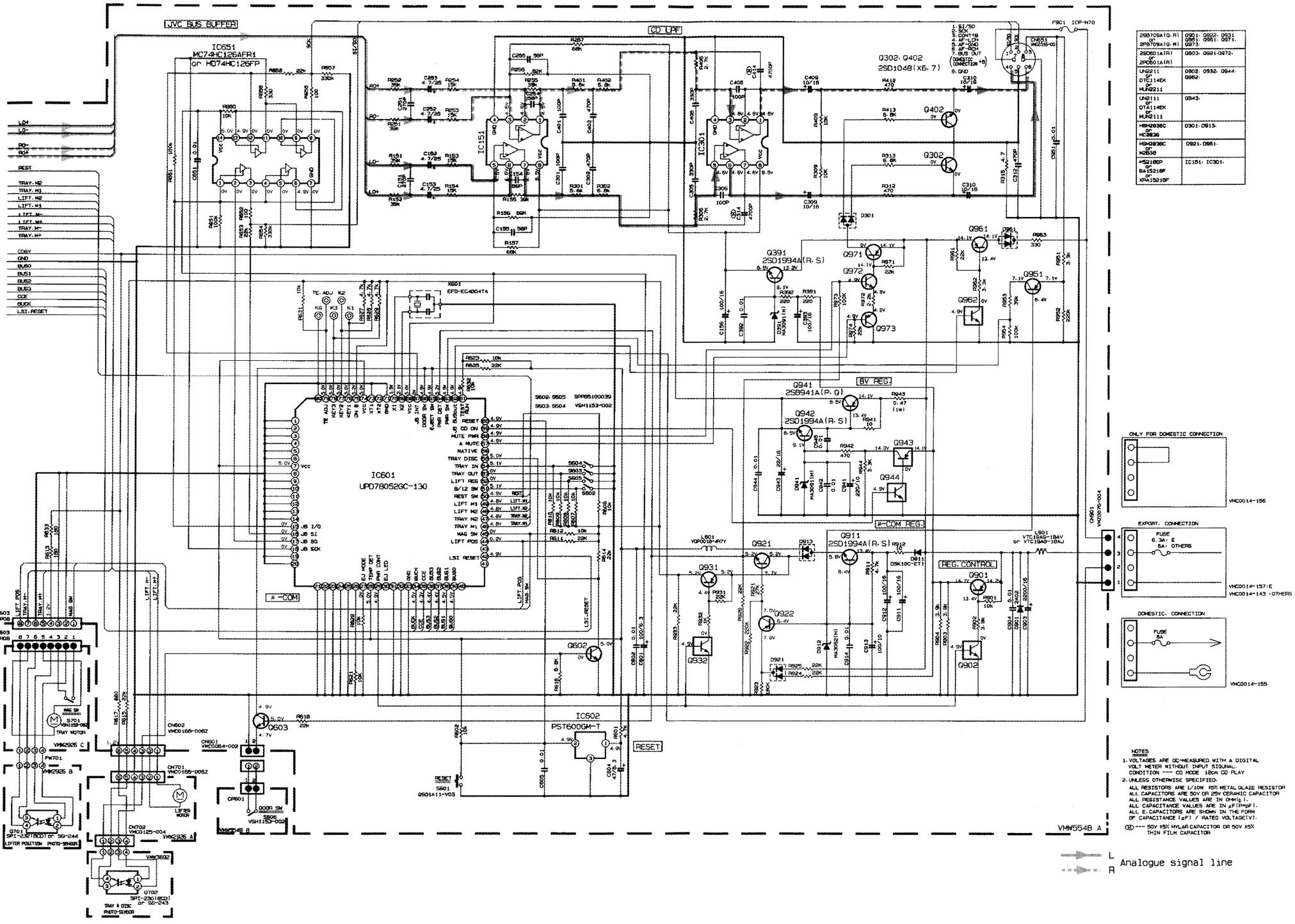


Standard schematic diagram



NOTES
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGUNAL. CONDITION ---- CD MODE
2. UNLESS OTHERWISE SPECIFIED.
ALL RESISTORS ARE 1/10W ±5% METAL GLAZE RESISTOR
ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR
ALL RESISTANCE VALUES ARE IN OHM(Ω).
ALL CAPACITANCE VALUES ARE IN μF(P=pF).
ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE (μF) / RATED VOLTAGE(V).
(CD) ---- 50V ±5% MYLAR CAPACITOR OR 50V ±5% THIN FILM CAPACITOR
(SP) ---- NON-POLARISED ELECTROLYIC CAPACITOR
(TE) ---- T.S.E CAPACITOR

Note : VDH3580001CV



2SB709A(Q, R) or 2SB709A(Q, R)	Q901, Q902, Q931, Q951, Q971, Q973.
2SD601A(R) or 2SD601A(R)	Q603, Q921, Q972.
UN2211 or DTC114EK or MUN2211	Q902, Q932, Q944, Q962.
UN2111 or DTA114EK or MUN2111	Q943.
HSH2836C or MC2836	Q301, Q913.
HSH2836C or M2836	Q921, Q961.
MSI08P or BA15218F or XPA15218F	IC151, IC301.

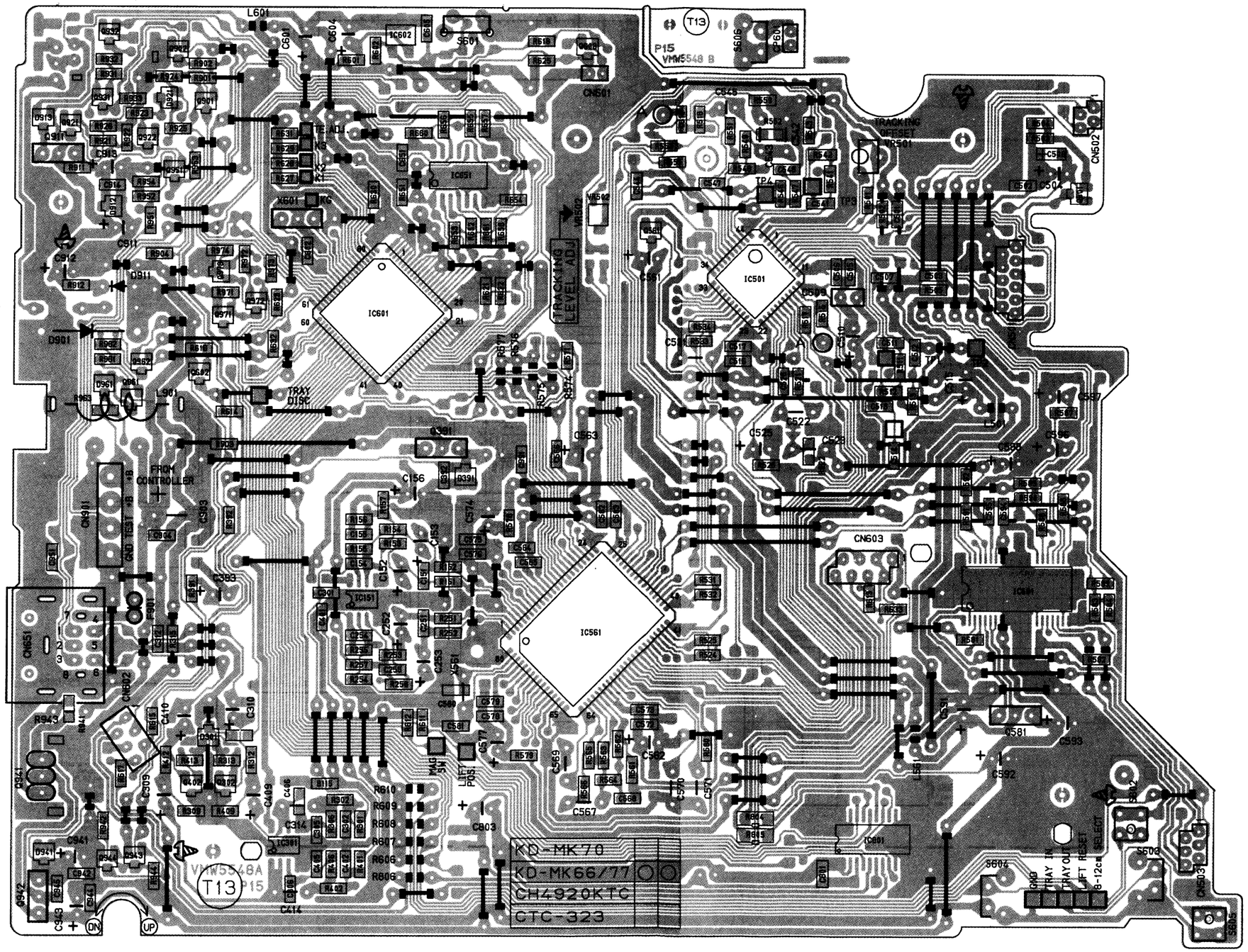
NOTES
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL.
CONDITION ---- CD MODE 12cm CD PLAY
2. UNLESS OTHERWISE SPECIFIED.
ALL RESISTORS ARE 1/10W ±5% METAL GLAZE RESISTOR
ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR
ALL RESISTANCE VALUES ARE IN OHM(Ω).
ALL CAPACITANCE VALUES ARE IN μF(P=pF).
ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF) / RATED VOLTAGE(V).
(SE) ---- 50V ±5% MYLAR CAPACITOR OR 50V ±5% THIN FILM CAPACITOR

L
R
Analogue signal line

Note : VDH35800001AV

Location of p.c. board parts

■ Main bord



A B C 2-24 D E F G H

5 4 3 2 1

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	CN501	QGF1011F1-11	CINNECTOR		
	CN502	QGF1011F1-04	CONNECTOR		
	CN503	QGF1011F1-06	CONNECTOR		
	CN601	QGA2006F1-02	CONNECTOR		
	CN602	QGF1207C1-06	CONNECTOR		
	CN603	QGB1219K1-08S	CONNECTOR		
	CN651	VMC0315-001	8P CONNECTOR	TCP9389	
	CN901	QGA3901F1-04	CONNECTOR		
	CP601	MA-Y-0-20-V5-02	WIRE&TUBE		
	D 301	HSM2836C	DIODE		
	D 391	MA3091/M/-X	ZENER DIODE		
	D 901	2A02	DIODE		
	D 911	DSK10C-E	DIODE		
	D 912	MA3062/H/-X	ZENER DIODE		
	D 913	HSM2836C	DIODE		
	D 921	HSM2838C	DIODE		
	D 941	MA3091/M/-X	ZENER DIODE		
	D 961	HSM2838C	DIODE		
	F 901	ICP-N70	IC PROTECTER		
	IC151	BA15218F-W	IC		
	IC301	BA15218F-W	IC		
	IC501	TA8191F	IC		
	IC561	TC9284BF	IC		
	IC581	BA6790FP-T1	IC		
	IC601	UPD78052GC-130	IC (MICOM)		
	IC602	PST600GM-T	IC		
	IC651	HD74HC126FP-X	IC		
	IC801	LB1831M-TPT1	IC		
	L 501	VQP0018-4R7	INDUCTOR		
	L 561	VQP0018-4R7	INDUCTOR		
	L 601	VQP0018-4R7	INDUCTOR		
	L 901	VTC19AG-18AJ	CHOCK COIL		
	Q 302	2SD1048/6-7/-X	TRANSISTOR		
	Q 391	2SD1994A(R,S)TA	TRANSISTOR		
	Q 402	2SD1048/6-7/-X	TRANSISTOR		
	Q 501	2SA1037AKT146	CHIP TRANSISTOR		
	Q 561	2SA1037AK/R/-X	CHIP TRANSISTOR		
	Q 581	2SB1322/RS/-T	TRANSISTOR		
	Q 602	2SC2412K/R/-X	TRANSISTOR		
	Q 603	2SC2412K/R/-X	TRANSISTOR		
	Q 901	2SA1037AKT146	CHIP TRANSISTOR		
	Q 902	DTC114EK	TRANSISTOR		
	Q 911	2SD1994A(R,S)TA	TRANSISTOR		
	Q 921	2SC2412K/R/-X	TRANSISTOR		
	Q 922	2SA1037AKT146	CHIP TRANSISTOR		
	Q 931	2SA1037AKT146	CHIP TRANSISTOR		
	Q 932	DTC114EK	TRANSISTOR		
	Q 941	2SB941A(P,Q)	TRANSISTOR		
	Q 942	2SD1994A(R,S)TA	TRANSISTOR		
	Q 943	DTA114EK	TRANSISTOR		
	Q 944	DTC114EK	TRANSISTOR		
	Q 951	2SA1037AKT146	CHIP TRANSISTOR		
	Q 961	2SA1037AKT146	CHIP TRANSISTOR		
	Q 962	DTC114EK	TRANSISTOR		
	Q 971	2SA1037AKT146	CHIP TRANSISTOR		

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	Q 972	2SC2412K/R/-X	TRANSISTOR		
	Q 973	2SA1037AKT146	CHIP TRANSISTOR		
	R 151	NRSA02J-393NY	MG RESISTOR	39K 5% 1/10W	
	R 152	NRSA02J-393NY	MG RESISTOR	39K 5% 1/10W	
	R 153	NRSA02J-153NY	MG RESISTOR	15K 5% 1/10W	
	R 154	NRSA02J-153NY	MG RESISTOR	15K 5% 1/10W	
	R 155	NRSA02J-393NY	MG RESISTOR	39K 5% 1/10W	
	R 156	NRSA02J-823NY	MG RESISTOR	82K 5% 1/10W	
	R 157	NRSA02J-683NY	MG RESISTOR	68K 5% 1/10W	
	R 251	NRSA02J-393NY	MG RESISTOR	39K 5% 1/10W	
	R 252	NRSA02J-393NY	MG RESISTOR	39K 5% 1/10W	
	R 253	NRSA02J-153NY	MG RESISTOR	15K 5% 1/10W	
	R 254	NRSA02J-153NY	MG RESISTOR	15K 5% 1/10W	
	R 255	NRSA02J-393NY	MG RESISTOR	39K 5% 1/10W	
	R 256	NRSA02J-823NY	MG RESISTOR	82K 5% 1/10W	
	R 257	NRSA02J-683NY	MG RESISTOR	68K 5% 1/10W	
	R 301	NRSA02J-562NY	MG RESISTOR	5.6K 5% 1/10W	
	R 302	NRSA02J-682NY	MG RESISTOR	6.8K 5% 1/10W	
	R 306	NRSA02J-272NY	MG RESISTOR	2.7K 5% 1/10W	
	R 309	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 312	NRSA02J-471NY	MG RESISTOR	470 5% 1/10W	
	R 313	NRSA02J-682NY	MG RESISTOR	6.8K 5% 1/10W	
	R 315	NRSA02J-4R7NY	MG RESISTOR	4.7 5% 1/10W	
	R 391	NRSA02J-221NY	MG RESISTOR	220 5% 1/10W	
	R 392	NRSA02J-221NY	MG RESISTOR	220 5% 1/10W	
	R 401	NRSA02J-562NY	MG RESISTOR	5.6K 5% 1/10W	
	R 402	NRSA02J-682NY	MG RESISTOR	6.8K 5% 1/10W	
	R 406	NRSA02J-272NY	MG RESISTOR	2.7K 5% 1/10W	
	R 409	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 412	NRSA02J-471NY	MG RESISTOR	470 5% 1/10W	
	R 413	NRSA02J-682NY	MG RESISTOR	6.8K 5% 1/10W	
	R 501	NRSA02J-124NY	MG RESISTOR	120K 5% 1/10W	
	R 502	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 503	NRSA02J-470NYM	MG RESISTOR	47 5% 1/10W	
	R 504	NRSA02J-470NYM	MG RESISTOR	47 5% 1/10W	
	R 505	NRSA02J-222NY	MG RESISTOR	2.2K 5% 1/10W	
	R 511	NRSA02J-123NY	RESISTOR	12K 5% 1/10W	
	R 512	NRSA02J-562NY	MG RESISTOR	5.6K 5% 1/10W	
	R 513	NRSA02J-152NY	MG RESISTOR	1.5K 5% 1/10W	
	R 514	NRSA02J-0RONY	MG RESISTOR	5% 1/10W	
	R 515	NRSA02J-472NY	MG RESISTOR	ｷｽﾒｵﾄﾄﾋﾞﾀｲｻｸ	
	R 517	NRSA02J-272NY	MG RESISTOR	2.7K 5% 1/10W	
	R 518	NRSA02J-104NY	MG RESISTOR	100K 5% 1/10W	
	R 521	NRSA02J-683NY	MG RESISTOR	68K 5% 1/10W	
	R 522	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 524	NRSA02J-332NY	MG RESISTOR	3.3K 5% 1/10W	
	R 525	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 526	NRSA02J-153NY	MG RESISTOR	15K 5% 1/10W	
	R 531	NRSA02J-473NY	MG RESISTOR	47K 5% 1/10W	
	R 532	NRSA02J-104NY	MG RESISTOR	100K 5% 1/10W	
	R 533	NRSA02J-183NY	MG RESISTOR	18K 5% 1/10W	
	R 534	NRSA02J-154NY	RESISTOR	150K 5% 1/10W	
	R 541	NRSA02J-153NY	MG RESISTOR	15K 5% 1/10W	
	R 542	NRSA02J-152NY	MG RESISTOR	1.5K 5% 1/10W	
	R 543	NRSA02J-331NY	MG RESISTOR	330 5% 1/10W	

● Main board parts list

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	BRK	VKL7059-002	TR BRACKET	FOR Q941	
	C 151	NCS21HJ-271AY	C CAPACITOR	270PF 5% 50V	
	C 152	QER41EM-475VM	E.CAPACITOR	4.7MF 20% 25V	
	C 153	QER41EM-475VM	E.CAPACITOR	4.7MF 20% 25V	
	C 154	NCS21HJ-560AY	C CAPACITOR	56PF 5% 50V	
	C 155	NCS21HJ-560AY	C CAPACITOR	56PF 5% 50V	
	C 156	QERF1CM-107ZM	E.CAPACITOR	100MF 20% 16V	
	C 251	NCS21HJ-271AY	C CAPACITOR	270PF 5% 50V	
	C 252	QER41EM-475VM	E.CAPACITOR	4.7MF 20% 25V	
	C 253	QER41EM-475VM	E.CAPACITOR	4.7MF 20% 25V	
	C 254	NCS21HJ-560AY	C CAPACITOR	56PF 5% 50V	
	C 255	NCS21HJ-560AY	C CAPACITOR	56PF 5% 50V	
	C 301	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 302	NCS21HJ-471AY	C CAPACITOR	470PF 5% 50V	
	C 305	NCS21HJ-331AY	C CAPACITOR	330PF 5% 50V	
	C 306	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 309	QER41CM-106	E.CAPACITOR	10MF 20% 16V	
	C 310	QER41CM-106	E.CAPACITOR	10MF 20% 16V	
	C 312	NCS21HJ-471AY	C CAPACITOR	470PF 5% 50V	
	C 314	QFLA1HJ-472ZM	M CAPASITOR	4700PF 5% 50V	
	C 392	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 393	QERF1CM-107ZM	E.CAPACITOR	100MF 20% 16V	
	C 401	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 402	NCS21HJ-471AY	C CAPACITOR	470PF 5% 50V	
	C 405	NCS21HJ-331AY	C CAPACITOR	330PF 5% 50V	
	C 406	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 409	QER41CM-106	E.CAPACITOR	10MF 20% 16V	
	C 410	QER41CM-106	E.CAPACITOR	10MF 20% 16V	
	C 414	QFLA1HJ-472ZM	M CAPASITOR	4700PF 5% 50V	
	C 501	NCS21HJ-471AY	C CAPACITOR	470PF 5% 50V	
	C 502	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 503	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 504	QER41AM-107	E.CAPACITOR	100MF 20% 10V	
	C 505	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 506	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 507	NCS21HJ-270AY	C.CAPACITOR	SPINDLE REVERSE	
	C 508	ECST0JY-475R	TS E CAPACITOR		
	C 509	QEE41VM-335B	TS.E.CAPACITOR	3.3MF 20% 35V	
	C 510	QER41AM-107	E.CAPACITOR	100MF 20% 10V	
	C 511	NCS21HC-4R0AY	C.CAPACITOR	4.0PF 5% 50V	
	C 512	NCT21CH-270AY	C.CAPACITOR	27PF +50:-10% 16V	
	C 513	NCB21HK-473AY	C CAPACITOR	.047MF 10% 25V	
	C 514	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 515	QER41AM-107	E.CAPACITOR	100MF 20% 10V	
	C 516	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 517	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 518	NCS21HJ-221AY	C CAPACITOR	220PF 5% 50V	
	C 522	QFV81HJ-223	FILM CAPACITOR	.022MF 5% 50V	
	C 523	QFV41HJ-104ZM	TF CAPACITOR	.10MF 5% 50V	
	C 525	QERF1AM-336Z	E.CAPACITOR	33MF 20% 10V	
	C 526	NCS21HJ-681AY	C CAPACITOR	680PF 5% 50V	
	C 531	QFLA1HJ-822ZM	M.CAPACITOR	8200PF 5% 50V	
	C 541	NCS21HJ-181AY	C CAPACITOR	180PF 5% 50V	
	C 542	QFV41HJ-123ZM	FILM CAPACITOR	.012MF 5% 50V	
	C 543	QFV81HJ-473	TF CAPACITOR	.047MF 5% 50V	

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	C 544	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 545	QEPJ1HM-105ZM	NP E CAPACITOR	1.0MF 20% 50V	
	C 547	NCS21HJ-821AY	C CAPACITOR	820PF 5% 50V	
	C 548	NCB21EK-823AY	C CAPACITOR	.082MF 10% 25V	
	C 561	QER41AM-107	E.CAPACITOR	100MF 20% 10V	
	C 562	QER41AM-107	E.CAPACITOR	100MF 20% 10V	
	C 563	QER41AM-107	E.CAPACITOR	100MF 20% 10V	
	C 564	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 565	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 566	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 567	QFV71HJ-103	TF CAPACITOR	.010MF 5% 50V	
	C 568	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 569	QFV71HJ-103	TF CAPACITOR	.010MF 5% 50V	
	C 570	QFLA1HJ-332ZM	M.CAPACITOR	3300PF 5% 50V	
	C 571	QFLA1HJ-332ZM	M.CAPACITOR	3300PF 5% 50V	
	C 572	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 573	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 574	QER41AM-227N	E.CAPACITOR	220MF 20% 10V	
	C 575	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 576	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 577	QER41AM-107	E.CAPACITOR	100MF 20% 10V	
	C 578	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 579	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 580	NCS21HJ-100AY	C.CAPACITOR	10PF 5% 50V	
	C 581	NCS21HJ-100AY	C.CAPACITOR	10PF 5% 50V	
	C 582	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 583	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 591	QER41AM-227N	E.CAPACITOR	220MF 20% 10V	
	C 592	QER41AM-227N	E.CAPACITOR	220MF 20% 10V	
	C 593	QER41AM-227N	E.CAPACITOR	220MF 20% 10V	
	C 594	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 595	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	
	C 596	QER41EM-475VM	E.CAPACITOR	4.7MF 20% 25V	
	C 597	QERF1AM-476Z	E.CAPACITOR	47MF 20% 10V	
	C 598	QER41HM-225	E.CAPACITOR	2.2MF 20% 50V	
	C 601	QER40JM-107	E.CAPACITOR	100MF 20% 6.3V	
	C 602	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 604	QERF0JM-476ZN	E.CAPACITOR	47MF 20% 6.3V	
	C 605	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 651	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 801	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 803	QER41AM-227N	E.CAPACITOR	220MF 20% 10V	
	C 903	QET41CR-228L16	E.CAPACITOR	2200MF +30:-10%	
	C 904	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 911	QERF1CM-107ZM	E.CAPACITOR	100MF 20% 16V	
	C 912	QERF1CM-107ZM	E.CAPACITOR	100MF 20% 16V	
	C 913	QER41AM-107	E.CAPACITOR	100MF 20% 10V	
	C 914	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 941	QER41AM-227N	E.CAPACITOR	220MF 20% 10V	
	C 942	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 943	QER41CM-226	E.CAPACITOR	22MF 20% 16V	
	C 944	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 945	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 951	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 991	NCS21HJ-101AY	C.CAPACITOR	100PF 5% 50V	

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	R 546	NRSA02J-184NY	MG RESISTOR	180K 5% 1/10W	
	R 547	NRSA02J-473NY	MG RESISTOR	47K 5% 1/10W	
	R 548	NRSA02J-153NY	MG RESISTOR	15K 5% 1/10W	
	R 549	NRSA02J-821NY	MG RESISTOR	820 5% 1/10W	
	R 550	NRSA02J-104NY	MG RESISTOR	100K 5% 1/10W	
	R 551	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 552	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 553	NRSA02J-681NY	MG RESISTOR	680 5% 1/10W	
	R 555	NRSA02J-225NYM	MG RESISTOR	2.2M 5% 1/10W	
	R 561	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 562	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 563	NRSA02J-154NY	RESISTOR	150K 5% 1/10W	
	R 564	NRSA02J-473NY	MG RESISTOR	47K 5% 1/10W	
	R 565	NRSA02J-225NYM	MG RESISTOR	2.2M 5% 1/10W	
	R 566	NRSA02J-333NY	MG RESISTOR	33K 5% 1/10W	
	R 571	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 574	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
	R 575	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
	R 576	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
	R 577	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
	R 578	NRSA02J-100NY	MG RESISTOR	10 5% 1/10W	
	R 579	NRSA02J-100NY	MG RESISTOR	10 5% 1/10W	
	R 580	NRSA02J-100NY	MG RESISTOR	10 5% 1/10W	
	R 581	NRSA02J-273NY	MG RESISTOR	27K 5% 1/10W	
	R 582	NRSA02J-392NY	MG RESISTOR	3.9K 5% 1/10W	
	R 583	NRSA02J-153NY	MG RESISTOR	15K 5% 1/10W	
	R 584	NRSA02J-472NY	MG RESISTOR	4.7K 5% 1/10W	
	R 585	NRSA02J-154NY	RESISTOR	150K 5% 1/10W	
	R 586	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 587	NRSA02J-222NY	MG RESISTOR	2.2K 5% 1/10W	
	R 588	NRSA02J-182NY	MG RESISTOR	1.8K 5% 1/10W	
	R 589	NRSA02J-472NY	MG RESISTOR	4.7K 5% 1/10W	
	R 590	NRSA02J-824NY	MG RESISTOR	820K 5% 1/10W	
	R 591	NRSA02J-222NY	MG RESISTOR	2.2K 5% 1/10W	
	R 592	NRSA02J-221NY	MG RESISTOR	220 5% 1/10W	
	R 601	NRSA02J-472NY	MG RESISTOR	4.7K 5% 1/10W	
	R 602	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 606	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 607	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 608	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 609	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 610	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 611	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 612	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 613	NRSA02J-181NY	MG RESISTOR	180 5% 1/10W	
	R 614	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 615	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 616	NRSA02J-682NY	MG RESISTOR	6.8K 5% 1/10W	
	R 617	NRSA02J-681NY	MG RESISTOR	680 5% 1/10W	
	R 618	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 621	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 622	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 623	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 625	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 627	NRSA02J-472NY	MG RESISTOR	4.7K 5% 1/10W	

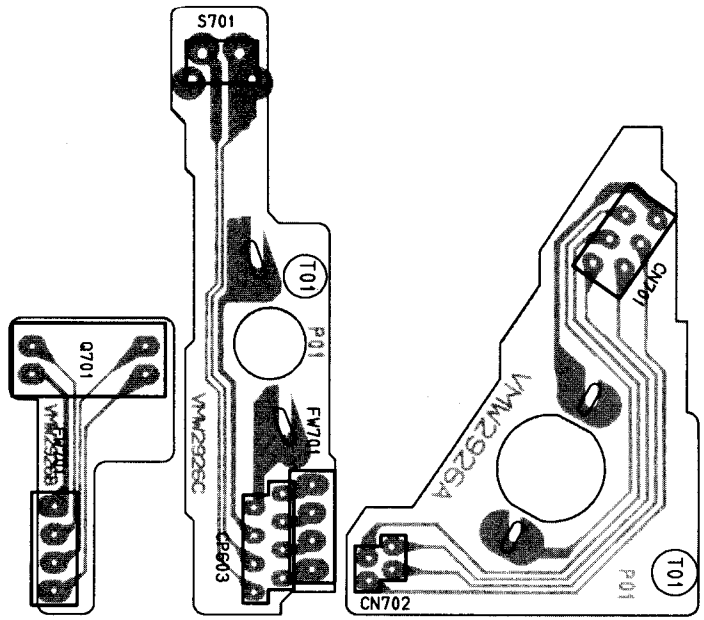
BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	R 628	NRSA02J-472NY	MG RESISTOR	4.7K 5% 1/10W	
	R 629	NRSA02J-472NY	MG RESISTOR	4.7K 5% 1/10W	
	R 631	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 632	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 633	NRSA02J-181NY	MG RESISTOR	180 5% 1/10W	
	R 651	NRSA02J-104NY	MG RESISTOR	100K 5% 1/10W	
	R 652	NRSA02J-101NY	MG RESISTOR	100 5% 1/10W	
	R 653	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 654	NRSA02J-334NY	RESISTOR	330K 5% 1/10W	
	R 655	NRSA02J-101NY	MG RESISTOR	100 5% 1/10W	
	R 656	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 657	NRSA02J-334NY	RESISTOR	330K 5% 1/10W	
	R 658	NRSA02J-331NY	MG RESISTOR	330 5% 1/10W	
	R 660	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 661	NRSA02J-104NY	MG RESISTOR	100K 5% 1/10W	
	R 804	NRS181J-1RONY	MG RESISTOR	1.0 5% 1/8W	
	R 805	NRS181J-1RONY	MG RESISTOR	1.0 5% 1/8W	
	R 806	QRD161J-2R2	C RESISTOR	B323 ノ イチ	
	R 901	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 902	NRSA02J-392NY	MG RESISTOR	3.9K 5% 1/10W	
	R 903	NRSA02J-392NY	MG RESISTOR	3.9K 5% 1/10W	
	R 904	NRSA02J-392NY	MG RESISTOR	3.9K 5% 1/10W	
	R 911	NRSA02J-472NY	MG RESISTOR	4.7K 5% 1/10W	
	R 912	NRSA02J-100NY	MG RESISTOR	10 5% 1/10W	
	R 921	NRSA02J-273NY	MG RESISTOR	27K 5% 1/10W	
	R 922	NRSA02J-224NY	RESISTOR	220K 5% 1/10W	
	R 923	NRSA02J-184NY	MG RESISTOR	180K 5% 1/10W	
	R 924	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 925	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 926	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 931	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 932	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 933	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 941	NRSA02J-100NY	MG RESISTOR	10 5% 1/10W	
	R 942	NRSA02J-471NY	MG RESISTOR	470 5% 1/10W	
	R 943	QRX014J-R47X	M.F.RESISTOR	5% 1/1W	
	R 944	NRSA02J-332NY	MG RESISTOR	3.3K 5% 1/10W	
	R 951	NRSA02J-332NY	MG RESISTOR	3.3K 5% 1/10W	
	R 952	NRSA02J-224NY	RESISTOR	220K 5% 1/10W	
	R 953	NRSA02J-393NY	MG RESISTOR	39K 5% 1/10W	
	R 954	NRSA02J-104NY	MG RESISTOR	100K 5% 1/10W	
	R 961	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 962	NRSA02J-332NY	MG RESISTOR	3.3K 5% 1/10W	
	R 963	NRSA02J-331NY	MG RESISTOR	330 5% 1/10W	
	R 971	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 972	NRSA02J-222NY	MG RESISTOR	2.2K 5% 1/10W	
	R 973	NRSA02J-104NY	MG RESISTOR	100K 5% 1/10W	
	R 974	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	S 601	QSQ1A11-V05	TACT SWITCH	SKHHLQ000	
	S 602	VSH1154-002	SWITCH	8/12 SW	
	S 603	VSH1153-002	SWITCH	TRAY OUT SW	
	S 604	VSH1153-002	SWITCH	TRAY IN SW	
	S 605	VSH1154-002	SWITCH	LIFT POS SW	
	S 606	VSH1153-002	SWITCH		
	SPACE	VYSA1R6-061	SPACER	FOR WIRE	

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	VR501	QVZ3523-104	V.RESISTOR		
	VR502	NVP0017-472X	V RESISTOR		
	X 561	VCX5016-934V	CRYSTAL		
	X 601	QAX0100-001Z	CERAMIC RESONAT		

■ Mechanism board

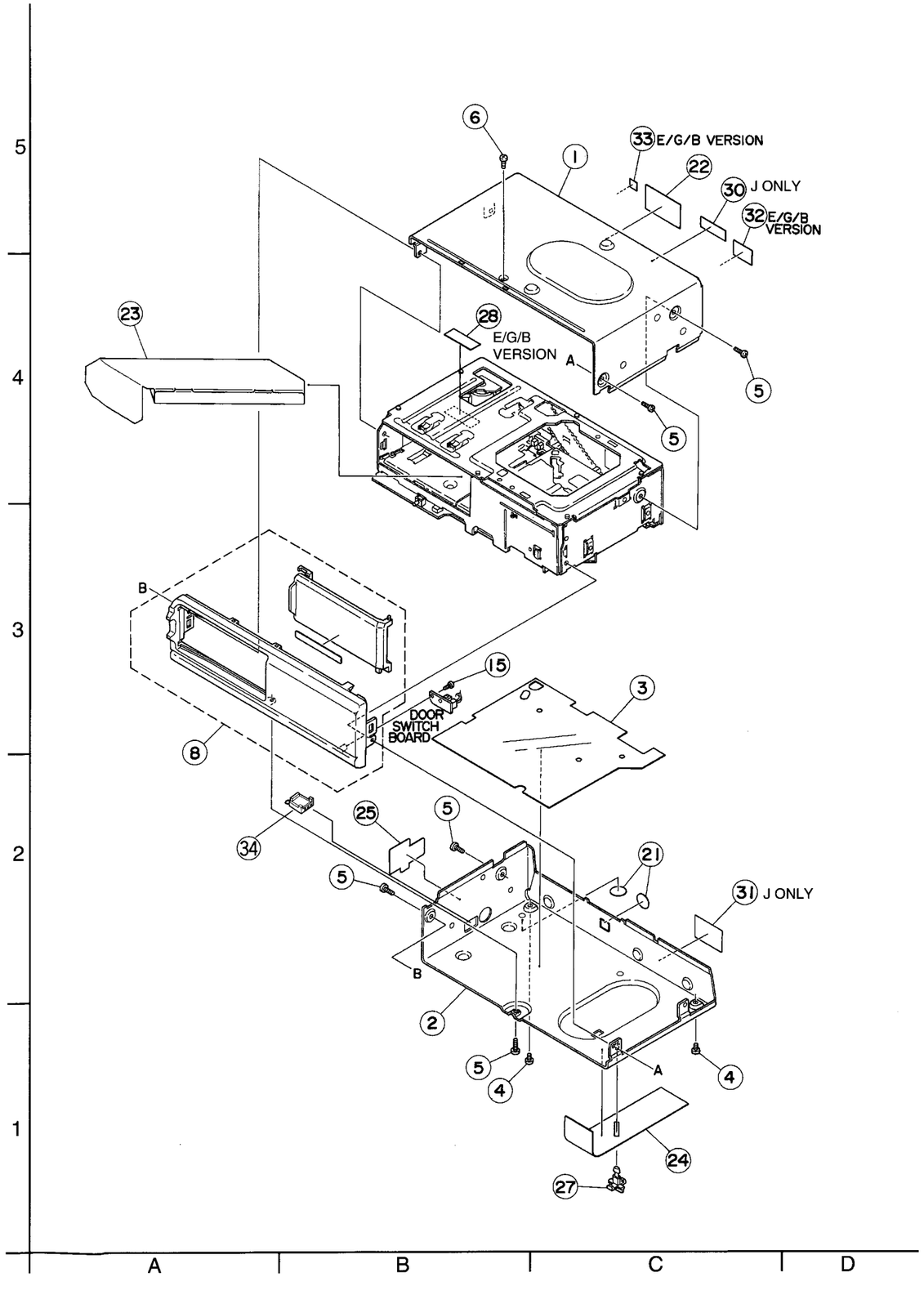


● Mechanism board parts list

BLOCK NO. 02

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	CN701	QGF1205C1-06	CONNECTOR		
	CN702	QGF1010C1-04	CONNECTOR		
	CP603	QGB1219J1-08S	CONNECTOR		
	Q 701	SG-244	PHOTOINTERRUPT		
	Q 702	SPI-230(B,C,D)	PHOTPINTERRUPT		
	S 701	VSH1153-002	LEAF SWITCH		

Exploded view of enclosure component

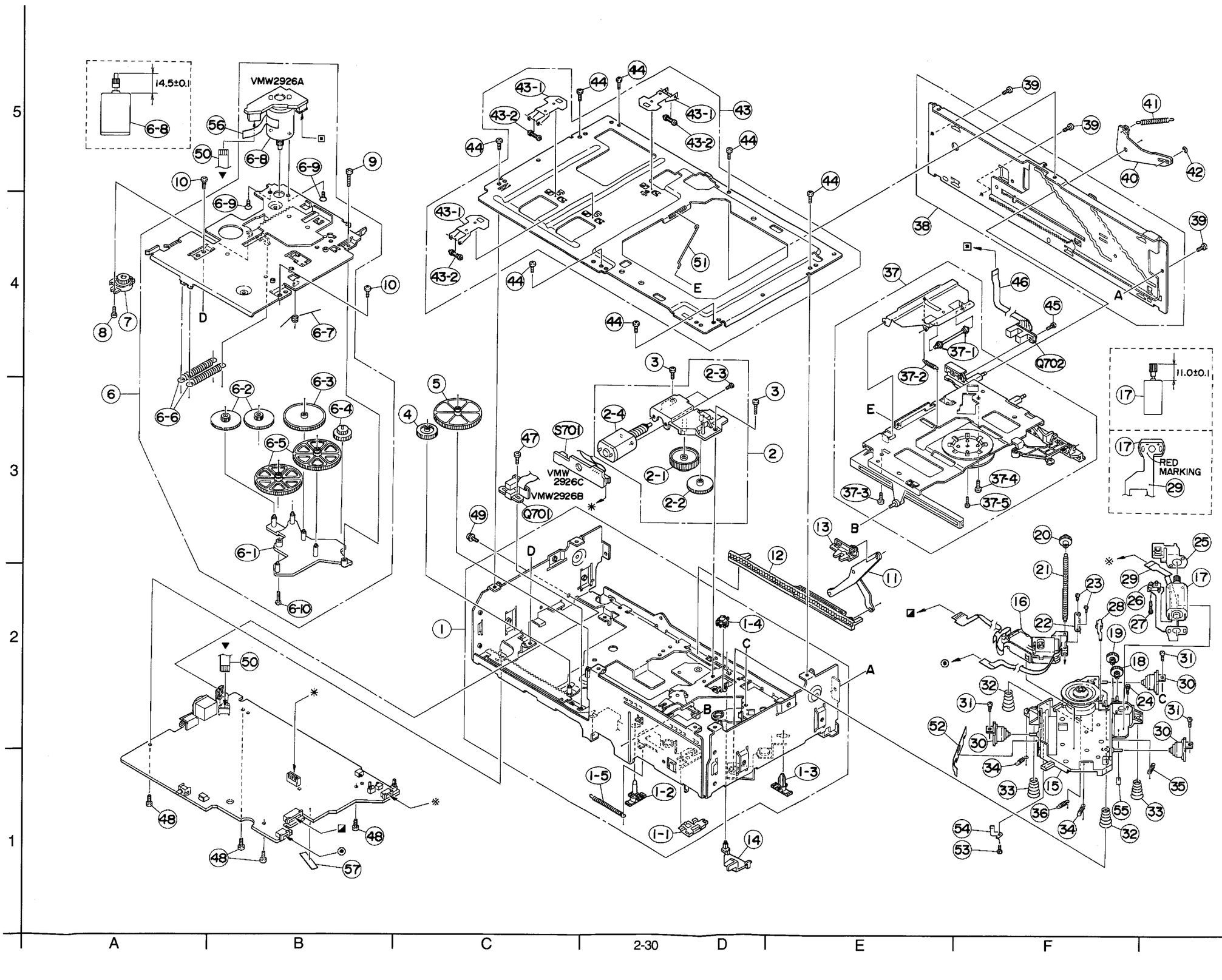


● Enclosure component parts list

BLOCK NO. M1MM□□□

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	1	VJG1301-241	TOP COVER	CH-X99 ONLY	1		GY
		VJG1301-401	TOP COVER	CH-X100 ONLY	1		BK
	2	VJG1302-241	BOTTOM COVER	CH-X99 ONLY	1		GY
		VJG1302-401	BOTTOM COVER	CH-X100 ONLY	1		BK
	3	VMA3220-003	INSULATOR		1		
	4	SDST2604M	SCREW	BOTTOM REAR SID	2		
	5	VKZ4759-001	SPECIAL SCREW	BOT&TOP+MECHA	5		
	6	SDST2003M	SCREW	TOP COVER FRONT	1		
	8	VJC3303-00A	F.PANEL ASS'Y	CH-X99 ONLY	1		GY
		VJC3303-00B	F.PANEL ASS'Y	CH-X100 ONLY	1		BK
	15	SDSF2004Z	SCREW	FRONT+SW PWB	1		
	21	VYSS2R2-028	SPACER	FOR BOTTOM	2		
	22	VYN3841-S002	NAME PLATE	CH-X99 ONLY	1	E	
		VYN3841-S001	NAME PLATE	CH-X99 ONLY	1	J,U	
		VYN3872-S001	NAME PLATE	CH-X100 ONLY	1		
	23	VPK3319-002	MECHA HOLDER	FOR TRANSFER	1		
	24	VND5157-001	CAUTION SHEET	FOR TRANSFER	1		
	25	VND5152-001	CAUTION LABEL	SIDE	1		
	27	VKS5502-002	TRA.MECHA HOLDE		1		
	28	E406709-001	LASER CAUTION		1	E	
	30	VND4999-001	FCC LABEL (3)	J	1	J	
	31	VND4922-007	CAUTION LABEL	CH-X100 ONLY	1	J	
		VND4922-001	CAUTION LABEL	CH-X99 ONLY	1	J	
	32	E70891-001	CLASS 1 LABEL		1	E	
	33	VND4597-001	APROVAL LABEL	E	1	E	
	34	VMC0014-156	POWER CORD		1		

Exploded view of mechanism component parts



● Mechanism component parts list

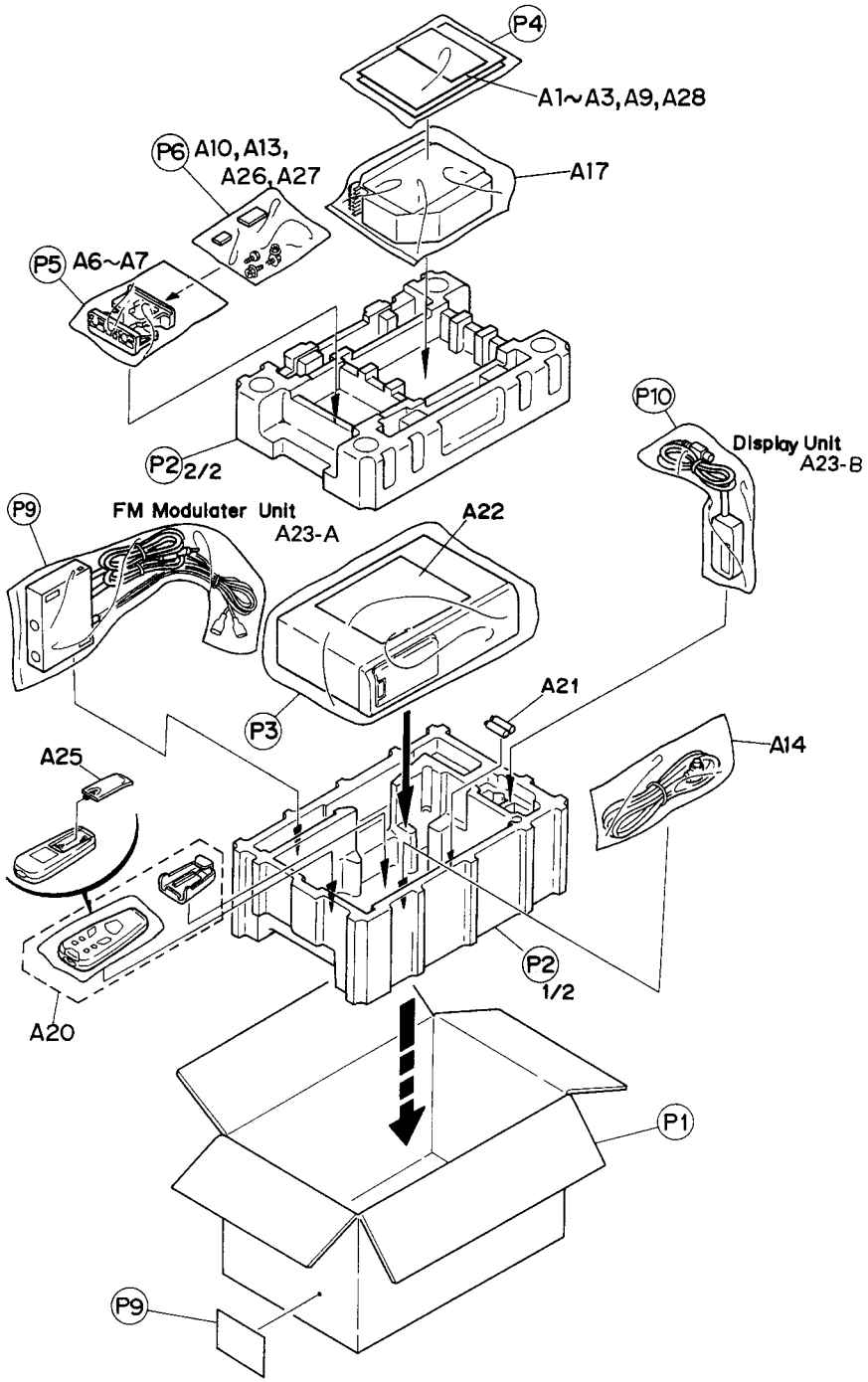
BLOCK NO. M2MM

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	1	VKL1425-00FSSF	CHASS FRAME ASY		1		
	2	VKS3675-00D	LOADING GEAR AS		1		
	3	SDST2605Z	SCREW		1		
	4	VKR4730-001	UP DOWN GEAR		1		
	5	VKR4739-001	SLIDER GEAR		1		
	6	VKL2729-00E	MAG.PLATE UNIT		1		
	7	VKZ4737-001	DAMPER		1		
	8	SDST2005Z	SCREW		1		
	9	SDST2610Z	SCREW		1		
	10	SDST2605Z	SCREW		2		
	11	VKL7736-00B	LOADING ARM ASY		1		
	12	VKS2237-002SS	LOADING RACK		1		
	13	VKS5495-004	HOOK		1		
	14	VKS5496-004	LOADING SW.ACT.		1		
	15	VKS3678-00G	TRA.MECHA ASS'Y		1		
⚠	16	OPTIMA-60D2	PICK UP UNIT		1		
	17	FF050SK11170SA1	DC MOTOR ASS'Y	(FEED)	1		
	18	VKR4733-001	MIDDLE GEAR		1		
	19	VKR4737-001	THIRD GEAR		1		
	20	VKR4736-001	S.SHAFT GEAR		1		
	21	VKZ4732-002	SCREW SHAFT		1		
	22	VKL7756-001	RACK PLATE		1		
	23	SPSK1720M	MINI SCREW		2		
	24	DPSP2005Z	SCREW		1		
	25	VKY4698-002	S.SHAFT SPRING		1		
	26	VSH1142-001	SWITCH		1		
	27	VKZ4248-208	MINI SCREW		1		
	28	VKS5500-001	REST SWITCH ACT		1		
	29	VMW3691-001	PW BOARD		1		
	30	VKZ4733-002	DAMPER		3		
	31	SDST2005Z	SCREW		3		
	32	VKW5138-002	SUSPENSION SP.		2		
	33	VKW5138-004	SUSPENSION SP.		2		
	34	VKW5139-002	TENSION SPRING		2		
	35	VKW5145-002	TENSION SPRING		1		
	36	VKW5140-002	SELECTOR SP.		1		
	37	VKM3804-00G	LIFTER ASS'Y		1		
	38	VKM3807-00B	REAR CHASS ASSY		1		
	39	SDST2605Z	SCREW		3		
	40	VKL7742-001	LIFTER TENS.ARM		1		
	41	VKW5142-002	TENSION SPRING		1		
	42	REE1500X	E.RING		1		
	43	VKM3811-00B	TOP PLATE ASS'Y		1		
	44	SDST2603Z	SCREW		7		
	45	VKZ4276-001	SPECIAL SCREW		1		
	46	VMW3692-001	PW BOARD		1		
	47	SDST2605Z	SCREW		1		
	48	SDST2605Z	SCREW		4		
	49	SWSP2606Z	SCREW		1		
	50	VWF1206-08TTBX	TAF CARD		1		
	51	VKZ4744-001	SAFTY ROD		1		
	52	VYTT706-001	FPC HOLDER		1		
	53	SPSH1765N	MINI SCREW		1		
	54	VKL7765-001	P.S.SPRING		1		

BLOCK NO. M2MM

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	55	VYTT473-005	DOUBLE FACE		1		
	56	VYSB1R3-011	SPACER		1		
	57	VYSA1R4-050	SPACER		1		
	59	VKL7949-001	ROD HOLDER		1		
	60	SDST2603Z	SCREW		1		
	61	VKL7885-001	L.RACK STOPPER		1		
	62	VKL7948-001	ROD SLIDER		1		
	63	VKZ4806-001	LOWER ROD		1		
	64	SDST2605Z	SCREW		1		
	1-1	VKL7740-001	V-H SELECTOR		1		
	1-2	VKS5492-001	TRAY GUIDE(1)		1		
	1-3	VKS5493-002	TRAY GUIDE(2)		1		
	1-4	VKS5494-001	CD8 DETECTOR		1		
	1-5	VKW5135-005	TENSION SPRING		1		
	2-1	VKR4729-001	LOADING GEAR		1		
	2-2	VKS5345-001	JOINT GEAR		1		
	2-3	SPSK2030M	MINI SCREW		2		
	2-4	PWN10EB12A5-SA1	DC.MOTOR ASSY	(TRAY LOADING)	1		
	37-1	VKZ4563-002	O-RING		2		
	37-2	VKW5141-003	TENSION SPRING		1		
	37-3	SDST2605Z	SCREW		1		
	37-4	SDST2605Z	SCREW		1		
	37-5	SPST2004Z	SCREW		1		
	43-1	VKY4699-001	MAGAZINE SPRING		3		
	43-2	VKR4734-001	MAGAZINE ROLLER		3		
	6- 1	VKS2236-002	UP DOWN GEAR BA		1		
	6- 2	VKR3001-002T	GEAR 2		2		
	6- 3	VKR4732-001	CONNECT GEAR		1		
	6- 4	VKR4730-001	UP DOWN GEAR		1		
	6- 5	VKR4731-001	SLIDER GEAR		2		
	6- 6	VKW5136-002	TENSION SPRING		2		
	6- 7	VKW5137-001	TORSION SPRING		1		
	6- 8	MXN13FB12F-SA7	DC MOTOR ASS'Y	(UP DOWN)	1		
	6- 9	SSSP3004Z	SCREW		2		
	6-10	SDST2008Z	SCREW		1		
	Q 701	SG-244	PHOTOINTERRUPT		1		
	Q 702	SPI-230(B,C,D)	PHOTOINTERRUPT		1		
	S 701	VSH1153-002	SWITCH		1		

Packing illustration and parts list



BLOCK NO. M3MM

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	P 1	VPC3872-S001	CARTON	CH-X100 ONLY	1		BK
		VPC3841-S002	CARTON	CH-X99 ONLY	1		GY
	P 2	VPH1687-00A	CUSHION ASS'Y		1		
	P 3	VPE3005-066	POLY BAG	FOR UNIT	1		
	P 4	QPA01702505P	POLY BAG		1		
	P 5	QPGA015-02503	POLY BAG	FOR MOUNT HOLDE	1		
	P 6	QPA00801205	POLY BAG	SCREW SA	1		
	P 9	----------	CARTON LABEL		1		

● Accessories list

BLOCK NO. M4MM

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	A 1	VNN3841-211S	INSTRUCT.BOOK		1	E	
		VNN3841-451S	INSTRUCT.BOOK	E	1	E	
		VNN3841-481S	INSTRUCT.BOOK	E	1	E	
		VNN3841-632S	INSTRUCT.BOOK		1	J,U	
	A 2	BT-51009-3	WARRANTY CARD	J	1	J	
		BT-52001-4	WARRANTY CARD		1	J	
		BT-54008-1	W.CARD		1	E	
	A 3	BT-20071B	SVC CENTER LIST		1	J	
		BT-20137	SVC CENTER LIST	J	1	J	
	A 6	VKS3691-001	MOUNT HOLDER(L)		1		
	A 7	VKS3692-001	MOUNT HOLDER(R)		1		
	A 9	VYTT670-001	SEAL		1		
	A 10	SDSP4008Z	SCREW		4		
	A 13	VKZ4029-003	SCREW	M5 X 20	4		
	A 14	QAM0080-001	8P BUS-BUS CORD		1		
	A 17	VYA3008-00RF	MAGAZINE ASS'Y	GREEN	1		
	A 22	VNC2400-173	INST SHEET		1		
	KIT 1	CHX99J-SCREW1	SCREW KIT1	A10,A13	1		

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